Amateur Radio

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WIRELESS INSTITUTE OF AUSTRALIA

Field Day fever

Reports from the John Moyle Memorial and National Field Days

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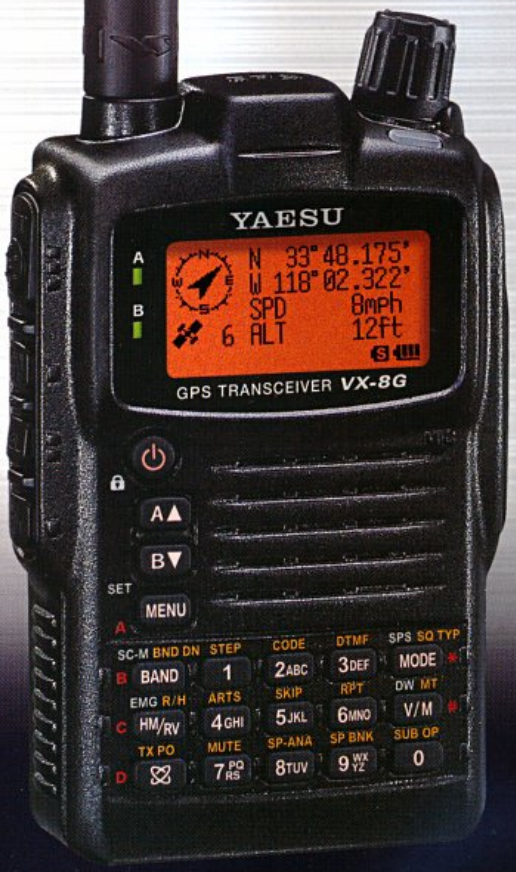

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Amateur Radio

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General

Cover photo

The cover this month depicts recent Field Day activities. The main photo shows the Hills Amateur Radio Group station at Mount Gunjin in WA for the John Moyle Field Day (Photo by Martin Stretton VK6ZMS).

Radio Victoria VK3WI interactive display at Point Gellibrand Coastal Heritage Park for the National Field Day, with Greens MP Colleen Hartland MLC at the microphone (Photo by Michele Grant VK3FEAT). The lower inset photo also depicts the National Field Day, with Jean VK3VIP and Jenny VK3NDR at the information table, part of the Eastern & Mountain District Radio Club station at Lilydale (Photo by John Fisher VK3DQ).

Technical

Columns

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's oldest National Radio Society, founded 1910.

Representing

The Australian Amateur Radio Service

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International Amateur Radio Union

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Editorial

Peter Freeman VK3PF

AR print and paper quality

I recently had correspondence from a WIA member regarding the quality of our magazine – *Amateur Radio*. In particular, the member was questioning if the decision to produce the magazine on "newsprint" was related to budget, and further he attempted to link the magazine print quality to the then just announced rises in WIA membership fees. I thought that many of our readers might be interested in the related facts, so here is my response to the inquiry:

AR has been published on newsprint for several years now - since well before I became Editor in 2006.

In 2010, we upgraded to a whiter and slightly heavier grade of paper when we changed printer, which brought with it an improvement in general reproduction and particularly the reproduction of colour images on the main pages of the magazine.

Production costs, especially the printing costs, are but one factor in the choice of printing technology used. We regularly explore the costs of moving to a whiter paper stock than currently used, but such a move would require a change of printing process. All previous quotations for such printing for *AR* at our small (for the printing trade) print run size would incur a significant increase in printing (and postage) costs. To date, we (Publications Committee (PubCom)) have chosen to not recommend such a change to the WIA Board, as we have considered the increased costs to be so significantly large that they were unlikely to be acceptable to us or the Board - they would require a very significant increase in the budget for *AR* and therefore a significant hike in membership fees for members.

With any printing technology, there are sometimes a number of impressions of a particular print run which have unacceptably poor reproduction. Most of these are usually picked up by the print house quality control mechanisms, but some may slip through and be sent out to recipients.

Perhaps the magazine that you received was one that was missed by quality control? If that is the case, I am sure that the WIA office can arrange for a replacement copy to be sent to you if you contact the office.

Having said that, I do note that the May issue appears to have unusually poor reproduction of the internal colour images, especially compared to the January/February and March issues. Most copies of the April issue that we have seen were acceptable, but some colour photos had some issues. But the May issue was definitely not up to the usual standard. We have initiated inquiries with the printer in an effort to determine the cause of this issue.

The Publications Committee has no involvement of the setting of WIA fees, which are determined solely by the Board. My only comment is that we have been at the same membership fee for several years, and any normal person would have expected a review of the fees annually, with some increase very likely at some stage - any organisation can only absorb the increases in costs bought about by inflation for a limited time, especially when it has already done so across several years. I do note that whilst *AR* production is a significant proportion of the WIA's annual budget, the organisation undertakes many other activities. Whilst many of the WIA activities are undertaken by volunteers, each will have associated costs for the organisation. We are lucky that we have the volunteers assisting the organisation - if we did not, I doubt that we would have as many services that many members enjoy, and probably we would not have a monthly magazine published 11 times a year.

The Publications Committee will continue to review our printing options and will make a recommendation to the Board for a change if and when we can produce a better quality finished product at what we consider to be a reasonable cost. For the moment, we strive to produce the best magazine possible within the budget constraints imposed upon us.

Continued on page 5

WIA comment

Michael Owen VK3KI

The RAVEN is not about to swoop

There has been much discussion recently in some quarters about the WIA in relation to emergency communications, with some suggesting that we have formulated policies when we are, in fact, still doing so.

Let me set out the current position of the WIA in relation to emergency communications.

First, why does the WIA think that what radio amateurs do in relation to emergency communications matters?

Amateur radio, in order to retain its increasingly valuable spectrum and privileges must be able to demonstrate a 'public benefit' in what it does. It can do that with an effective and relevant emergency communications capability, supporting the emergency services and the community.

Since 2003, when that part of the ITU's international Radio Regulations governing the amateur services was reviewed and amended, the importance of amateur radio emergency communications has been recognised internationally.

In Australia for many years the WICEN groups, through their volunteers, have been the focus of amateur emergency communications. Generally these groups are separate clubs. They grew out of the old Divisions, when the WIA was a federal organisation of state and territory organisations.

But despite their name, while many are affiliated clubs, they are not part of the WIA and cannot be controlled by the WIA.

The fact is that these organisations vary greatly from place to place, some having effective working relationships with local organisations, some providing safety support for community organisations in non emergency roles, some have almost ceased to exist.

It may be unkind to say it, but in some places WICEN is a solution looking for a problem to solve.

There is no national organisation and no single approach to amateur emergency communications.

But we also believe that over the years what is needed has changed. Once, the value of the amateur was to provide emergency communications using his own equipment. It is now clear that the manpower resources of the emergency services organisations become severely stretched during a protracted emergency, and suitably trained and qualified radio amateurs who can operate emergency services communications systems can be a valuable resource.

For a number of years the WIA has been considering these issues. In July 2009 the WIA proposed the possibility of a nationally recognised competency based Training Package, and in the September 2009 issue of *Amateur Radio,* under the heading "What about WICEN" I said "What should be the role of the WIA so far as the existing WICEN groups are concerned is not so clear."

The WIA has gone ahead with the training and accreditation program. It has distinguished between members and non members in the training program, subsidising part of the cost of the training for members and charging what it believes are the real costs for non members. It was concerned at the possible effects of different insurance coverage between members and non member participants in courses, overcoming this by creating a free, non-voting, temporary membership, but providing this magazine for 6 months in the hope that at least some would become full members.

The accreditation process has started, with the application forms now on the WIA website. This is only for voting members and is not automatic, requiring the meeting of certain health, mobility, hearing and similar requirements.

We believe that in doing that, we are providing valuable support for the WICEN organisations. We believed a training and accreditation program would be seen as complementing, supporting and strengthening the activities of the WICEN groups.

Once again, all of this was reviewed at our last face to face Board meeting at the beginning of April.

It was recognised that we needed to promote the WIA accreditation program to the appropriate services, government and non government.

In drawing together the various streams of ideas, we thought we would try to find a name for the project, and subject to what we called in our minutes "some cautious field testing", we decided to try the term RAVEN – Radio Amateur Volunteer Emergency Network. We have identified it as a tentative name, but because of the word "Network", seen in the same sense as in the term WICEN, we now feel that tentative use was rather putting the cart before the horse.

We also asked our group responsible for steering our work in this area to seek further advice and "on the basis of this advice and further investigations, to propose a structure and identify individuals to ensure that the representation of amateur emergency resources at appropriate regional levels was available."

Continued on page 5

WIA news

ACMA to review amateur station inspections program

Following the President's "Comment" published in the April 2011 issue of *Amateur Radio* magazine, WIA Directors Michael Owen and Peter Young met with senior ACMA staff including Mark Loney, Executive Manager, Operations Branch and staff from the Compliance Operations, Field Operations and Industry Partnership areas.

At the meeting the WIA's concerns regarding the station inspection program and the legislative basis for some of the outcomes of individual inspections were presented. The ACMA advised that the inspection program was undertaken as a proactive measure to combat interference issues, as well as educate and generate awareness among the amateur community of their responsibilities.

The WIA has now been advised by the ACMA that its contribution is appreciated and that the ACMA is keen to continue to work with the WIA on these matters. The ACMA intends to review the station inspection program in light of our concerns and the information gathered from the visits to date.

Mobile Fox Hunt on the Golden Goal

Late last year WIA Australian ARDF coordinator Jack Bramham VK3WWW reported that a Norwegian television show by the name of "The Golden Goal" had contacted him in regard to the possible filming of a segment on ARDF and foxhunting in Australia.

The Golden Goal is a high rating Norwegian sports show that prides itself on showing some of the world's most unusual sports. A number of emails were exchanged between Jack and the show's producers, some helpful background information on foxhunting was supplied, with the final reply "we are coming to Melbourne can you arrange an event for us to attend".

A foxhunt on 10 December 2010 was the perfect opportunity for the crew. So the Golden Goal flew two presenters, two cameramen, a producer and a director from Norway to Melbourne Australia and filmed the amateur radio foxhunt!

The night was a great success, everyone involved thoroughly enjoyed themselves, it was filmed in a light hearted way, the crew got some great footage and the show has now been aired in Norway on their commercial television network.

2010 Club Grant results announced

The WIA Board, at its recent face to face meeting, considered the recommendations it had received in respect of applications for Club Grants for 2010.

The Board paid particular attention to the number of WIA members in clubs seeking Grants. The Report setting out the reasons for its decisions has been placed on the WIA website, and copies will be sent to all clubs that made an application.

Successful clubs will be advised of any steps that will need to be taken before the Grant can be sent. Reference to projects to be completed by 1 April 2011 is no longer appropriate, and clubs will simply be requested to complete projects within the next 6 months.

Those clubs receiving grants are, in no order of importance. Please see table below.

Amateur radio continuing to help in Japan

When these notes were compiled (16 April, 2011), amateur radio activity was continuing to help those mainly within the disaster recovery area struck by the worst earthquake in Japan in 140 years. IARU Region 3 Secretary, Ken Yamamoto JA1CJP said "several stations are handling medium distance information exchange on 7.030/7.043 MHz."

The operation in VHF and UHF bands becomes more active than in earlier days. About 250 transceivers with JARL licences are used for communications between various refugee rest places and local government offices.

Redcliffe & District Radio Club *Building an ATV Transmitter* Amount sought - $460	Amount granted - $400
Lockyer Valley Radio Electronics Club *Purchase Wind Generator* Amount sought - $1389	Amount granted - $1000
Moorabbin & District Amateur Radio Club *Purchase Portable Generator* Amount sought - $1000	Amount granted - $900
Rockhampton & District Amateur Radio Club *Equip shack at historical centre* Amount sought - $4000	Amount granted - $1500
Radio & Electronics Association of Southern Tasmania *Scholarships for licence course and WIA membership* Amount sought - $1500	Amount granted - $1000
WICEN South Australia *Purchase Hi-Vis vests, Lights etc* Amount sought - $550	Amount granted - $430
Albury Wodonga Amateur Radio Club *Purchase amateur radio station for teaching purposes* Amount sought - $650	Amount granted - $500

Continued on page 5

WIA news

Continued from page 4

Two sets of 430 MHz repeaters have also been delivered to the disaster area and they are operational now to enhance the existing repeaters' coverage and provide easier communications between hand-held transceivers.

The big earthquake, now graded at nine on the Richter scale, and followed by a tsunami hit north-eastern Japan on 11 March, and crippled a nuclear power facility. More than 13,500 have been killed. The headquarters station of the Japan Amateur League (JARL) in Tokyo, JA1RL became a disaster communication centre in the days immediately after the disaster. Ken JA1CJP said, "It should be noted that some towns are so heavily disrupted that the local government offices are also in the refugee centres and the residents are staying in multiple places. In such cases, amateur radio can contribute a lot to maintain the ties between the local government and residents."

Darwin WIA Annual Conference

As of 12 May 2011, the WIA office reports that 100 people have registered for the WIA Annual Conference to be held in Darwin on 27, 28 and 29 May 2011.

President of the Darwin Amateur Radio Club, Spud Murphy says that all is ready for a great weekend.

Editorial

Continued from page 2

We are definitely chasing up the print house following the May issue - we need to return to the quality achieved with earlier issues this year (January/ February and March).

What are your views?

Both PubCom and particularly I would be interested in your views.

Are we doing a reasonable job with the magazine? I try to balance all the interests of the hobby, provided that I have material to publish – our hobby is very diverse!

If you have any pressing thoughts on your magazine, please send them in to either myself or Ernie VK3FM, PubCom Secretary. The comments will be carefully considered by PubCom. We cannot guarantee any changes in the short term – we all face budget constraints.

Regards,

Peter VK3PF

WIA comment

Continued from page 3

In short, we have not yet answered the question: what should be the role of the WIA and in what structure in relation to the provision of emergency communications in Australia beyond its training and accreditation program?

Certainly we have a role internationally, perhaps using specialist resources. We must ask could what is being done now be done better? Have we the resources to provide a substitute organisation? Should we enter into partnership arrangements with other organisations?

Can we better provide a national focus for amateur emergency organisations and volunteers? If so, how?

Have we been going slow? In a word, yes. Why? Because we see these as very complex issues across our nation, at times rather emotive issues, and with structures and requirements evolving all the time. If we move too fast, without the support of a majority, we will simply further fragment amateur radio's approach to these vitally important issues.

We have had some very thoughtful suggestions offered to us.

We invite further input, both from groups and from individuals.

We may even consider a weekend roundtable for all of those who are interested.

We believe that the training and accreditation program should be a first step to a new national approach to the provision of communications in emergencies. The WIA will continue to seek the best solution, so that the skills and training of radio amateurs are best utilised in times of great need for the benefit of the community of which they are part.

WIA Club Grant Scheme – 2011

Applications are now being accepted. See page 45 for details.

VK7news

Justin Giles-Clark VK7TW

Email: vk7tw@wia.org.au
Regional Web Site: *http://reast.asn.au/*

All 73 of the attendees at the Meet the Voice gathering at Ross, Tasmania.

Meet the Voice BBQ

The annual Meet the Voice BBQ was held on March 20 at Ross in the beautiful currently green midlands of Tasmania. Official numbers were 73 in attendance along with many partners, XYLs and K9s! The finicky VK7 Autumn weather was kind and it turned into a magnificent day. The Sewing Machine Award was presented to Scott VK7NWT, previously VK7FTTT, with special achievement awards going to Frank VK7CK and Dick VK7DIK. The raffle was very popular with a big thank you to all our raffle prize donors resulting in five very happy people following the drawing of the raffle. Proceeds from the day went to the NW repeater group to help with the upkeep of NW repeaters. A big thank you to all who contributed to the organisation of this very successful day.

Raffle tickets selling fast – Meet the Voice gathering 2011.

Repeater updates

On the North West coast the 6 m repeater VK7RTV (53.775 MHz) has been returned to service following a power amplifier failure. VK7RMD (146.625 MHz) on Mt Duncan has received some TLC and performance has improved. VK7RAC (438.650 MHz) on Table Cape and the APRS repeater were taken off air due to a power supply failure and this has been repaired. The APRS repeater on St Valentine's Peak VK7RVP has also received some TLC and is now performing well. In the South, Hayden VK7HA has VK7RCH (438.575 MHz) back on the air on Grey Mountain in the Huon Valley with links to VK7RAA in the North. A test APRS digipeater, VK7WCN-1 (145.175 MHz), has been co-sited with VK7RCH on Grey Mountain. The digipeater has good cover throughout the Huon Valley and to the deep South. It is hoped to make this installation permanent. VK7RAD is also back on the air following multiple power amplifier failures. A great big thank you to all who maintain and keep these repeaters going around VK7, it is very much appreciated by the VK7 amateur community.

Northern Tasmania Amateur Radio Club

The VK7RAA (147.00 MHz) repeater antennas on Mt Barrow are mounted on the Air Services Australia tower and the mounting bracket needs replacing. NTARC put out the call and the amateur community came to the party and the commercial bracket has been manufactured to ASA standards. Thanks to donations from around Tasmania the cost of the bracket has been covered. NTARC would like to thank very much the donations received from WICEN South, REAST and Peter VK7PL and Lois.

Cradle Coast Amateur Radio Club

The Cradle Coast Amateur Radio Club AGM was held Sunday 26 February and the Committee members are as follows: President David VK7EX, Vice President Dick VK7DIK, Secretary David VK7DC, Treasurer Dick VK7FORF and committee person Eric VK7NFI.

On 19 March 2011 CCARC provided communications for the Kentish Endurance Riders Club (KERC) at Sheffield. The club provided a base and seven checkpoints at five locations. Using 2 metre radios, good coverage was achieved for the 12 km radius of the event. The ride involved 95 riders and included three calls for transport

for injured horses. Positive reports were received from the KERC who were very happy with the service.

17 April 2011 saw CCARC operating from Hiscutt Park in Penguin for a family BBQ and demonstration of what amateur radio is all about. There was much interest from the public with many questions asked along with many contacts being made with many stations during the day.

Winston VK7EM lets us know that the Tuesday evening WIA and VK7 Regional News re-broadcasts in NW Tasmania have a new time on Tuesday night. These rebroadcasts on VK7RMD (146.625 MHz) now start at 8.00 pm.

North West Tasmanian Amateur TeleVision Group

Tony VK7AX reminds us of the WIA and VK7 Regional News rebroadcasts around the Ulverstone area at 9:00 am and 8:00 pm on Sunday and 11:00 am on Monday on the following frequencies: VK7RTV (53.775 MHz & IRLP 6124), (146.775 MHz & IRLP 6616) and (ATV 444.250 MHz Vision and 449.750 MHz Audio). The broadcasts are also video streamed at: *http://vk7ax.camstreams.com* and EchoLink node 100478 - VK7AX-L and EchoLink Node 152375 - VK7AX-R.

The club meeting on 2 April 2011 was well attended and attendees were treated to a video of Ron VK7RN's trip to Ottawa, Canada, including the Fred Hammond Museum.

Radio and Electronics Association of Southern Tasmania

Congratulations to the University of Tasmania Outstanding Achievers for 2010 - Thomas Karpiniec VK7NML received a Dean's Citation for his Bachelor of Engineering (Honours) and Andrew Welch VK7AL was on the Dean's Roll of Excellence for his dual degrees of Bachelors of Science and Engineering. Congratulations also go to Damien Styles who has upgraded to his Advanced licence - VK7SD.

REAST at the National Field Day 2011.

REAST's March presentation was given by Richard VK7RO and the author on Software Defined Radio. Richard and Justin took the audience through the advantages and then showed the Genesis and HPSDR radios. The presentation included a demonstration of the PowerSDR and KISS Konsole software using the hpsdr. Thanks to Richard.

REAST's April presentation was given by Peter Yates VK7PY, who is the Telecommunications Manager, and Ian McLean VK7IM, who is Senior Technical Officer, with the Australian Antarctic Division. Peter and Ian took the audience through the very impressive Antarctic Division's telecommunications system from the satellite systems utilised, a demonstration of talking with someone at Mawson base via radio and the Asterisk based VOIP/Linux system. Everything is touch screen driven and seamlessly integrates VOIP, RF (Airband, HF and VHF) and satellite communications. Thanks to Peter and Ian.

REAST setup an impressive demonstration of amateur radio on the lawns at Salamanca Place in Hobart on the National Field Day.

A big thank you to the WICEN crew especially Roger VK7ARN and Garry VK7JGD for their assistance with HF, VHF and APRS displays. Thanks also to Tony VK7VKT, Sam VK7FSTL and Ken VK7DY for their assistance with the impressive display of equipment. We had many interested members of the public as well as some "lapsed" amateurs who all went away from the display with up-to-date information on the hobby and many questions answered.

Our Digital ATV Experimenters nights have continued to be successful with many articles of show and tell including CODEC2, Lo-Key magazine, Scientific American magazine article on CubeSats, set top box mods to run them off 12 V DC for portable operation, 1984 Amateur Radio Action magazine which featured the Quoin Ridge Monitoring Station, VK7PAH's latest Arduino project, the Canon Hack Development Kit and dual batteries in vehicles. Our video presentations library has grown to over 240 titles which we are adding to each week. Interested? Come along on Wednesday night at 7:30 pm in the Queen's Domain clubrooms DATV Studio. See you there!

Multiband antennas

Kevin Parsons VK2JS

Amateurs new to the hobby, or others casting about for a general purpose HF antenna, will invariably consider centre-fed doublets of some kind, of which easily the most settled upon must be the G5RV- around since the late 1940s and built in the thousands by new and seasoned amateurs alike. Notwithstanding its popularity, the idea of forcing any single-wire antenna to serve a number of bands is not universally supported. So some thoughts; especially on the G5RV, but perhaps more generally.

From time to time we hear someone holding forth, with great wisdom, along the lines 'of course, old man, you must understand the G5RV is, after all, a compromise; there *are* better arrangements, you know'. Well no doubt there are better arrangements if one has the real estate. But, as simple wire antennas go, it is a pretty good compromise. Though nothing magic, it is 31.1 metres (102 feet) of 100-percent used, un-trapped, wire in the air. A clever, essentially 20 metre antenna, without extremes of impedance on several bands, providing a relatively easy task for the necessary antenna tuner. G5RVs and the like have a good deal going for them in suburban situations where a multiband antenna is often more workable than a nest of dipoles.

Now that signs of ten metre propagation are returning, one negative aspect of the G5RV, glossed over in most literature, could be worth a mention. Unhappily its performance on 28 MHz is not the best; contributing factors being the length of the antenna itself, and the interface between coaxial cable and the feedpoint of the matching section. Taken in isolation one would not set up a ten metre antenna along these lines, though even the proverbial piece of wet string will sometimes work.

As we know, the antenna is commonly fed through a 14 MHz half-wave open-wire matching section, about 10.36 metres long, depending on velocity factor. Being three half-waves long on 14 MHz, it presents an acceptable impedance at the antenna centre, about 100 - j40 ohms, which is then reflected to the lower end of the open-wire section presenting a similarly acceptable interface to 50 or 70 ohm coax. The problem is that at 28 MHz, the antenna is exactly six half-waves long and, this being an even number, the feeder will be connected at a voltage node, looking into a very high impedance; perhaps several thousand ohms. The 14 MHz half-wave matching section, a full-wave on 28 MHz, will reflect this same high impedance down to the junction, producing a most unacceptable interface with the coax.

Photo 1: The assembled choke, side view.

Though the environment of the antenna may vary the parameters, the potential weakness is very much there. Newly licensed around 1980, the writer built the first of several G5RVs without thinking too much about it, and was disappointed to find it seriously outclassed on 10 metres by a simple half-wave dipole – much more so than differing lobe patterns would indicate.

Modifying it to, say, the ZS6BKW version will circumvent the problem, but it can be attended to in several ways. One is to effectively shorten the antenna on 28 MHz by one half-wave, so that it becomes, electrically, five half-waves long and thereby fed at a current node. A comfortable impedance at the feed point will be reflected at the bottom of the matching section.

This is easily brought about by converting the outer 2.47 metres on each end of the G5RV into a 28 MHz quarter-wave trombone; effectively lopping, at this frequency, one quarter-wave from both sides of the antenna. All one does is run a parallel wire for this distance spaced an inch or two below the antenna, shorting it to the main wire at the far point. The ease of tuning, and the liveliness of the antenna on ten metres should dramatically improve, with very little effect on other bands.

Turning to feeder arrangements, there is much to be said for running open-wire line to the centre of any freely-suspended antenna; 100 percent reliability; no water problems; no heavy coax, balun, connectors etc. to pull the centre downwards. And, in the case of G5RVs and variants, the inherent provision of the prescribed matching section. But whatever the antenna, it is clearly not sensible to join coax directly to open wire line; centre conductor to one leg and braid to the other. It is tantamount to grounding or partially grounding one half of the antenna via the outer surface of the braid. To what degree will depend on the length of the coax, proximity to ground, metal, wet brickwork, and the like, frequency in use, and others. The many variables are best removed by isolating the outer of the braid from the rest of the system.

In this context, the use of ferrite cored trifilar baluns in transmission lines with high standing-wave ratios is strongly not advised. They can become highly inefficient at circuit impedances significantly above or below the design value. To counter this, many have installed a simple choke using the coax itself immediately before the junction. A coil of some ten turns, about 0.15 metres diameter, is typical. Although a step in the right direction, such a choke is likely to have an inductance of about 15 microHenries yielding about 350 ohms on 80 metres, which is not really enough for the desired isolation. Also on the higher bands self-capacity between the coils may seriously lessen its effectiveness.

Nevertheless a suitably configured choke can be highly effective. After all, coaxial cable wound into a coil will throughput RF energy as would an equal length of uncoiled cable. Only the outer surface of the braid looking backwards from the junction is at issue. If the impedance of the coiled braid could be raised, with lowered self capacity, the resulting choke should be capable, on all bands, of isolating the junction from ground. The trick is to use little coax plus a fair amount of ferrite.

An easily-made arrangement, which has been used with various multi-band doublets, is based on eleven turns of coaxial cable looped comfortably through two or three FT-240-77 toroids, or similar ferrite devices, in which the winding is spaced to minimize self-capacitance while providing sufficient inductance.

Close to 1.4 metres of RG58 or equivalent cable is threaded through holes in a piece of acrylic sheet sandwiched loosely between the toroids. The acrylic is drilled with considerable precision to make two concentric rings each with ten holes to locate the inside and outside of the turns plus one at the centre. The inner-ring diameter being 3 cm, and the outer about 8 cm with the holes placed to bisect the angles between the inner-ring holes and the centre. The sixth turn, at the half-way point, is a pass through the centre hole. The ends of the coil, when completed, will thereby appear at opposite sides of the winding. For RG58 cable, 6 mm holes are suitable and, to space the turns, the inner ring must be marked accurately and drilled carefully. The winding holds the toroids in place. The photographs show it more clearly.

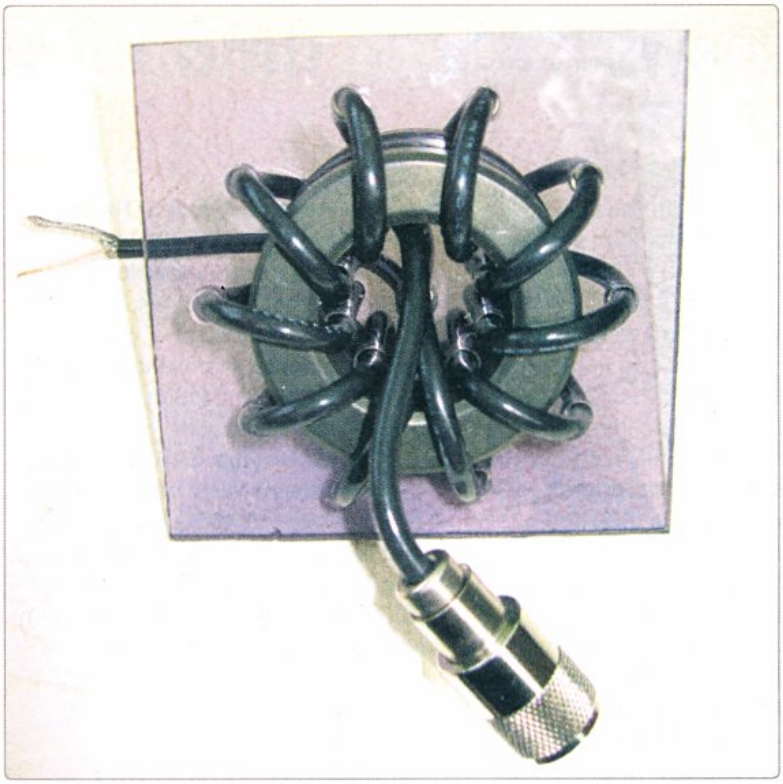


Photo 2: The assembled choke, from the top.

The inductive impedance between the ends of the braid of such a choke using three toroids should be greater than about 10500 ohms at 3.5 MHz, and higher at 28 MHz. There is the prospect of considerably better performance than obtained with the simple coiled-coax choke mentioned earlier, and with a layout not likely to produce series-resonance problems at amateur-band frequencies. PVC plumbing bits and pieces make a good waterproof container.

Of course some are able to run open-wire feeder from the centre of the antenna right into the shack. The feeder, no matter what the VSWR on the several bands, will be virtually lossless. The choke can then be installed between the end of the feeder and the, presumably unbalanced, tuner output via a short length of coax. In the case of the G5RV, it will still be helpful to get rid of that sixth half-wave on 28 MHz.

Living in an over-55s estate these days with space restrictions, the writer uses a random-length, centre-fed antenna plus a robust T-match tuner, mostly on 80 and 40 metres. It is somewhat shorter than 31.1 metres (102 ft) and fed by an equally random length of home-brew feeder, all of which the tuner takes care of with ease; on all bands including 10 metres. From signal reports the system appears comparable with resonant directly-connected half-wave dipoles. If carefully constructed, avoiding components with lossy potential, the *compromise* opinion referred to in the beginning seems hardly justified. Furthermore, it is highly satisfactory, with only one general-purpose wire antenna, to get back on ten metres from time to time; a great band for DX when it is open, and for local rag-chewing at other times. There is, too, the background concern that, if we do not use it, the powers that be will turn beady eyes to it.

VK2news

Tim Mills VK2ZTM
vk2ztm@wia.org.au

It is the big month for the **Oxley Region ARC** with the 36th annual Field Day in the club's 40th year. It will be on Saturday 11 and Sunday 12 – on the June long weekend. Details of the venue and dinner were given in the May issue of *AR* magazine. A bit of late information is that Dot VK2DB will be in attendance as the VK2 representative of ALARA. Main local repeater is VK2RPM on 146.700 MHz, with back up on VK2RCN 147.000 MHz.

The **Illawarra ARS** is running a crystal set construction competition for the rest of 2011. Check out the rules on their web site *www.iars.org.au* Their annual picnic is being planned for Saturday 10 September – a full day of fox hunts, BBQ and DX radios. The monthly meeting is held on the second Tuesday evening at the Visitors Centre, Industry World on Springhill Road, Coniston. There is a possible change of venue. Their linked 2 metre repeaters provide coverage from north of Sydney to south of Batemans Bay. In the north is 146.850, then 146.975 and finally 146.675 MHz. IRLP node 6018 and no access tones are required.

The **Central Coast ARC** outside the annual field day is a hive of activity. Business night the first Friday and lecture on the third from 7.30 pm. The club rooms in Dandaloo Street, Kariong are also open Saturday morning from 10.30 am and a project and development group meet on Tuesday at 7.30 pm. Visit *www.ccarc.org.au* or phone 02 4340 2500.

The **Orange & District ARC** are nearing the end of their anniversary special call VI50AOA. Their monthly meeting on the first Friday evening is now held at the Orange SES HQ in McLachlan St.

The **Hellenic Amateur Radio Association of Australia Inc** is preparing to invade Lord Howe Island between 24 July and 2 August 2011with a DXpedition – VK9HR. You can contact team leader Tommy VK2IR on 0413 005 511 or *president@haraoa.com*

The **St. George ARS** are also in the anniversary mode with a special event callsign VK40SGARS until the end of July for their 40th Anniversary. The first meeting was at the home of [SK] John Lambert VK2AKQ in South Hurstville in May 1971. They held a dinner on May 4. For more details www.sgars.org or email to *info@sgars.org*

The annual **Waverley ARS** auction will be on the morning of Saturday 9 July at the Rose Bay club rooms. The **Riverina Field Day** will be held at Lavington on Sunday 31 July. The **Summerland ARC** SARCFEST is on 7 August. The **Illawarra ARS** field day Saturday 10 September.

Wagga Wagga & Districts Amateur Radio Club's AGM will be held in the clubroom in Small Street, Wagga Wagga on 24 June at 8 pm. Please come along to show your interest in our club.

The annual **Urunga Radio Convention** was held over Easter with an attendance of about 50. Reports received advised that there was generally good weather with a couple of bits of light rain Sunday but this did not deter the fox hunters, who had stiff competition from the VK3 teams.

ARNSW held their AGM in the Centenary Building at the VK2WI site on Saturday 16 April. Special guest was WIA President Michael Owen VK3KI. Also attending was Vice President Phil Wait VK2ASD. It was a wet day but there was a good attendance considering the conditions. The business was soon dealt with and Michael addressed the gathering on a range of national and international aspects of the hobby. Phil spoke about various technical matters. A BBQ lunch concluded the proceedings.

The call for nominations for this year's ARNSW committee resulted in the previous personnel, less Michael Corbin VK2YC, standing for 2011/2012. A ballot was not required. The positions are also similar to last year with Terry Ryeland VK2UX as President and Education Officer. Mathew Magee VK2YAP as Senior Vice President, Web Master and Broadcast co-ordinator. Peter Zielinski VK2PJZ as Junior Vice President and Security. Norm Partridge VK2TOP as Secretary and Membership. Brian Kelly VK2WBK as Treasurer. Tim Mills VK2ZTM with Dural Property, Publicity, Minutes and *AR* notes. Mark Blackmore VK2XOF as Dural Engineer, Deceased Estates and Trash & Treasure. Bob Yorston VK2CAN with Social and Welfare activities.

The next Trash & Treasure at the VK2WI site will be at the end of July. The Monday evening training session is well underway with Terry VK2UX as the tutor. It is expected to continue until the spring. The higher HF bands are improving. The first DX QSL card for many years arrived recently for the Dural based 10 metre beacon VK2RSY on 28.262 MHz. Telephone contact with ARNSW by either 02 9651 1490 or 0400 445 829. Mail to P. O. Box 6044 Dural Delivery Centre NSW 2158. Email to *secretary@arnsw.org.au* or web site *www.arnsw.org.au*

73 – Tim VK2ZTM

A device holder for SMD construction

Winston Nickols VK7EM

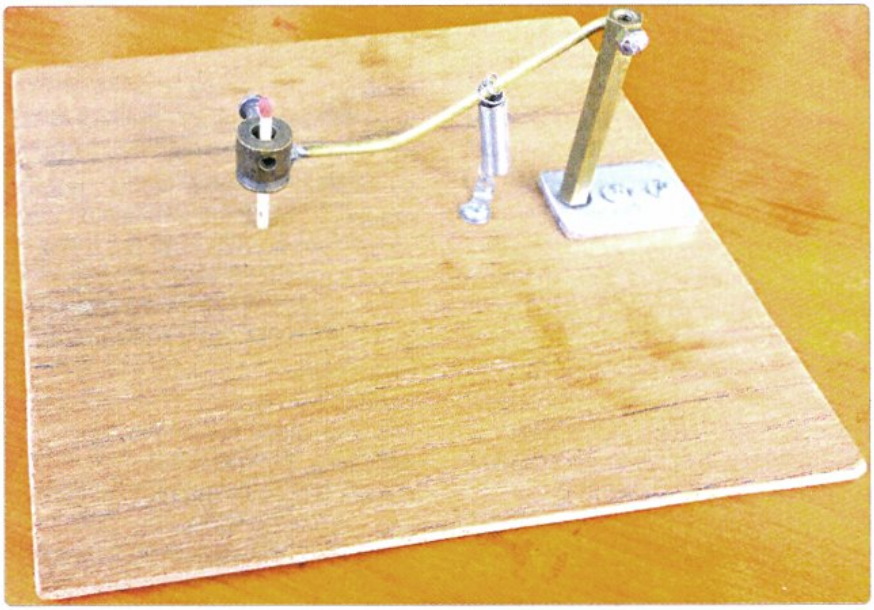


Photo 1: The SMD device holder.

When installing surface mount devices (SMD) I notice most instruction sheets suggest using tweezers.

Well, in my experience it is very likely the component will 'shoot' out and probably end up on the floor or be lost. Also I find 'tacking' the component in place with solder carried on the iron could cause more stress to the chip as it has to be done properly a second time.

I built this device which overcomes these shortcomings and allows two free hands, one for the solder, and the other for the iron. Place the chip over the required pads and align it carefully. With a good magnifier it is now a simple matter (and fun to watch) to have the solder 'pop' neatly into place.

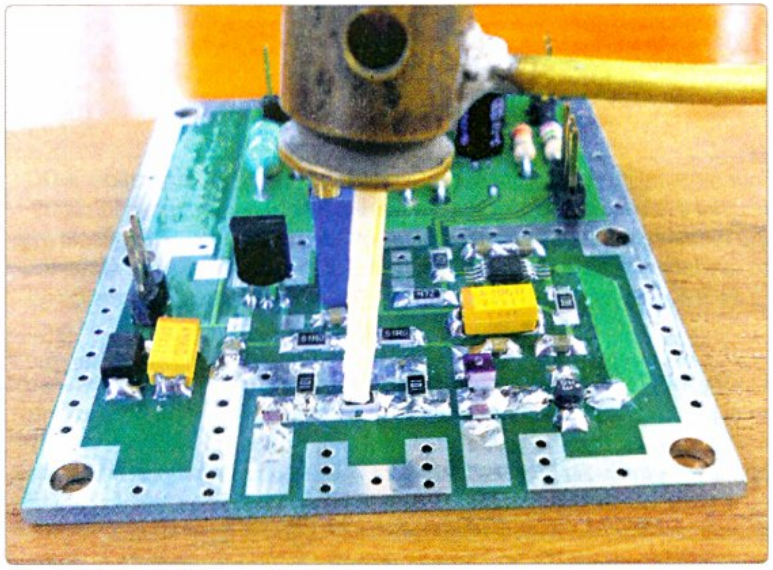


Photo 2: The SMD device holder in use.

Down in the dirt: radio earths...

Dale Hughes VK1DSH

Most amateurs have some sort of radio earth connection for their radios and aerials. This earth is generally separate from the 'mains' earth which provides protection to the operator in the event of an electrical fault. The radio earth is likely to be a ground rod driven into the soil somewhere near the radio; its function may be for lightning protection, noise reduction, or just to provide a common reference point for various items of equipment. For many aerials and frequency bands the earth connection does not play a big part in our ability to transmit or receive signals with high efficiency and so the resistance of earth connection is not often considered.

There is a great deal of information available about installing earth systems in the technical literature (both amateur and professional), but the focus of this article is on calcul ating and measuring the resistance to earth of whatever earthing system you have installed rather than the actual details of installing an earth system.

The impetus to write this article came from the need to get a 'good' earth for use with a short vertical aerial on 137 kHz. For the lower frequency bands, especially if using short vertical aerials, the earth plays a significant role in the station's ability to radiate a signal with reasonable efficiency. With typical aerials that can be constructed in a domestic/urban situation, the earth resistance is probably the dominant loss factor and reducing it can lead to significantly improved transmission efficiency.

The importance of a good earth is well known to communication professionals who install MF and LF transmission systems; such installations may have 120 or more quarter wave radials centred on the vertical radiator. As the wavelength increases so does the length of wire needed to get a suitable earth. This sort of approach is beyond the resources of the typical amateur who has to accept a much poorer radio earth.

Having built a 'T' type aerial about 10 metres high and 26 metres long, the earth system needed attention. The original station earth consisted of three 1400 mm long by 12.5 mm diameter copper clad steel earth rods, spaced about 1500 mm apart and connected together. (The rods are available from electrical wholesalers.) Following transmission tests, a further three spaced rods were added which resulted in slightly increased aerial current when transmitting. At this point I thought 'what is the actual earth resistance and how might I measure it?'

An initial attempt to simply measure the DC resistance between the cold water tap and radio earth gave no sensible result as there were several hundred millivolts of AC voltage between the two earth connections. A better technique was required... but another question then arose – is the cold water tap a very good earth? How would I know?

A partial solution to the first problem was to use a four-terminal measurement technique with a battery, current limiting resistor and two voltmeters. Figure 1 shows the circuit. By measuring the current that flows through the earth and the voltage across the earth connections, the earth resistance can be calculated.

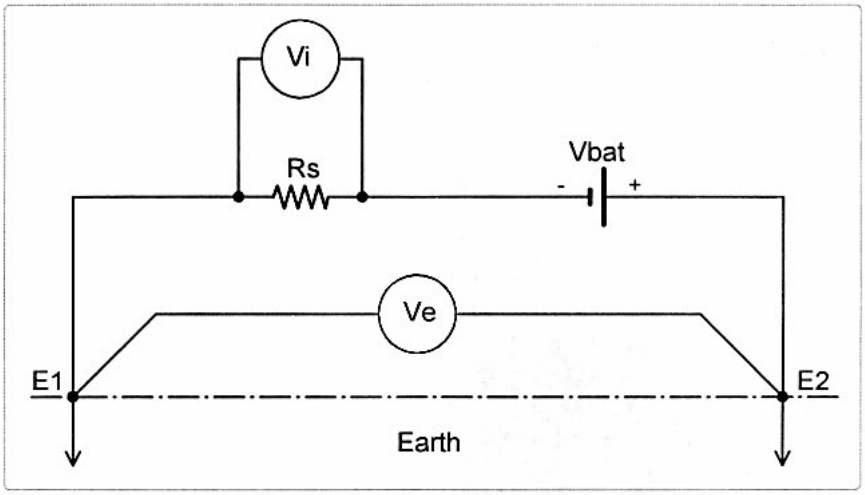


Figure 1: Four terminal measurement of earth resistance using DC excitation. If DC excitation is used it is useful to repeat the measurements with the opposite polarity to assess the measurement errors caused by electrode polarisation. The user is free to select the excitation voltage (Vbat) and the value of the current limiting resistor Rs. I used a 24 V battery and a 33 Ohm resistor. The earth resistance is calculated using

$$\mathrm{Re} = Rs\frac{Ve}{Vi} \qquad (2)$$

Where:
Re = *the apparent earth resistance,*
Rs = value of current limit resistor,
Ve = voltage measured across the earth electrodes,
Vi = voltage measured across the current limit resistance,
E1 & E2 are earth electrode connections.

This approach worked quite well and my initial measurement was under one ohm! I was pleased - it seemed too good to be true – which it was... there was equipment connected to the radio earth that also had a mains earth connection, so my first attempt was actually measuring the resistance of the copper wire that connected to the mains earth. But it did show that the mains earth is well connected to the cold water tap – a useful thing to know. A repeat measurement between the earth pin of a power point and the cold water tap confirmed the measurement.

A slight digression at this point: We all know that the 240 VAC mains socket has three pins: an active, a neutral and earth. It turns out that the neutral wire is connected to earth at the fuse board of every consumer, all of which are connected by a common neutral wire. This is called the Multiple Earthed Neutral system. The end result of this is that the mains earth pin has many physical connections to the actual earth which results in it having a very low resistance and this is important if the mains earth is to adequately perform its protective function. It also makes it a suitable reference point of our purposes in measuring the resistance of our radio earth.

Earth configuration	Apparent resistance
Mains earth pin to cold water tap	0.4 ohms
Isolated earth rod to cold water tap	42.8 ohms
Radio earth (6 stakes) to cold water tap	5.5 ohms
Radio earth (7 stakes) to cold water tap	4.9 ohms
Radio earth (8 stakes) to cold water tap	4.5 ohms
Isolated earth rod to radio earth	47.8 ohms

Table 1: Summary of earth resistance measurements. The table shows the dramatic reduction in earth resistance due to installing additional earth rods; the results also show the reducing incremental decrease in resistance as additional rods are added. Note that earth rods should be spaced by at least their length so that effects of mutual resistance do not compromise the effectiveness of the earth.

Having established a suitable reference earth, it was then easy enough to measure the resistance between the radio earth and reference earth. As the DC method has some issues due to polarisation of the electrodes, an AC source was used, as shown in Figure 2, for all following measurements.

After some research about measuring earth resistance I came to the conclusion that knowing the actual resistivity of the soil around the earth system would be useful. A simple formula to calculate the resistance of a single isolated earth rod is given in a number of documents (1):

$$R = \frac{\rho}{2\pi L}\left[\ln\left(\frac{8L}{d}\right) - 1\right]$$

Where:
R = resistance (ohms)
ρ = soil resistivity (ohm.metres)
L = buried length of earth rod (m)
d = diameter of earth rod (m)

This equation is often called the 'modified Dwight formula' after its creator. If R is known by measurement, the equation can be inverted to calculate the soil resistivity (ρ). In this case, for R ~ 43 ohms, then ρ ~ 65 ohm.m. Note that the value will change according to soil moisture content and temperature. The calculated value is fairly typical for inland soils. An additional benefit of knowing the soil resistivity is that it can be used to refine the results obtained from antenna modelling software by entering the appropriate data in the model parameters.

Following the resistance measurement of the single isolated earth I added a seventh, then eighth and final earth rod to the earth system to see the effect. The end result was a ground resistance of 4.5 ohms which is slightly less than the calculated parallel connection of earth rods.

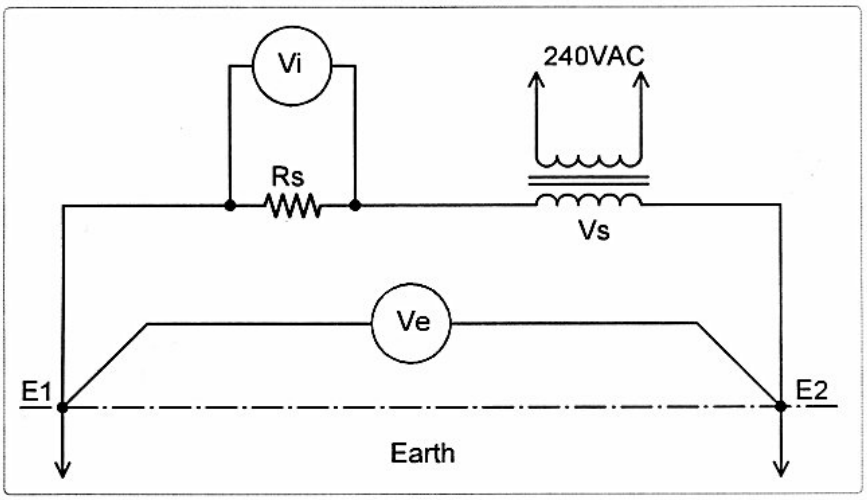


Figure 2: The AC version of the four terminal resistance measurement technique. The excitation current is calculated from the voltage measured across the series resistor. As before, the user is free to select other excitation voltages (Vs) and current limit resistor, equation (2) is then used to calculate the resistance. For this case I used a 75 ohm resistor and a 40 VAC supply. In both cases a suitable ammeter may be used instead of measuring the voltage across the current limit resistor, but the resistor should always be included to prevent large currents flowing in the event of a short circuit.

The difference is probably due to the use of bare copper wire linking all of the rods, small scale variations of soil resistivity or the presence of buried conductors such as water pipes and tree roots. The final configuration of the earth rods and connection wires is an approximately radial array of earth conductors and rods that form a conductive network to ground at the point where the current density is highest, that is, at the feed point of the aerial.

Table 1 summarises the results of the measurements between the various earth connections.

Conclusion

It appears that in a suburban area the mains earth is a suitable reference point to measure the resistance of the stations radio earth if a suitable measurement technique is used. Measurements show that installing additional earth rods can significantly decrease the earth resistance, but that additional rods provide incrementally smaller reductions in earth resistance. Note that measurements made at other sites will be different due to different soil characteristics (including soil moisture) and presence or absence of other sub-surface conductors.

References

1. See for example Australian Standard 'Lightning protection', AS/NZ 1768:2007 Appendix C which has a useful table of resistivity for various soils and equations for calculating the resistance for various earth system configurations.

The Darwin ARC at the WIA National Field Day in Darwin, 2011

Spud Murphy VK8ZWM

The Darwin Amateur Radio Club (DARC) display was at the Rapid Creek Business Village Sunday markets. We arranged with the markets manager Costa for a good position with outside access so we could erect some antennas.

What a great day, lots of people, lots of great food, coupled with lots of interest shown in our display.

Alan VK8AB brought along his computer and wireless internet adaptor to give us a fairly noise free HF set-up remoted from home. Much better than all the electrical noise at the shopping centre.

Spud VK8ZWM and Peter VK8HPB brought along their VHF and UHF equipment and antennas so we had HF, VHF and UHF as well as D-STAR operational. Quite a few contacts were had with other sites and operators around the country via IRLP and D-STAR including two into ZL.

Photo 1: Members of the DARC at their NFD site, the Rapid Creek Business Village Sunday markets.

We had 13 good enquiries and quite a few others showing some interest. We gave out lots of handouts and information about the Foundation licence as well as what is needed for the Standard and Advanced. Let us see what comes of the enquiries. We have already had more than 20 successful examinations in the last year.

In all, a far more successful exercise than last year's NFD.

My FT-290R repair adventure

Steve Ireland VK2MD (ex VK5AOZ)

I always loved reading 'The Serviceman' where the skilled serviceman quickly tracked down and fixed a problematic TV or radio with almost surgical precision. This article is slightly different. It describes the successful repair of an old radio by a more circuitous route by an amateur who had not touched a soldering iron in 20 years.

I was licensed in the early 1980s and in about 1983/84 I purchased an FT-290R. I used this rig pretty constantly till the early 1990s, then with marriage and work taking priority I pretty much stopped playing amateur radio and the rig was put away in a box. I knew that one day I would want to use it again.

That one day arrived again in 2010 when a friend of mine caught the amateur radio bug again and he infected me, blast it! I purchased a new HF radio, a FT-950, and had an FT-50R from 1999, but really wanted a fixed two metre rig for the shack. The FT-290R would fit the bill nicely! Out came the old girl, which had the mobile mounting bracket, and a 25 watt amplifier, attached. I connected power, an aerial and switched on. A big 'Phuuttt' noise ruined my day and magic blue smoke leaked out of the amplifier box. The FT-290R was silent. On further investigation the big 'Phuuutt' was a tantalum capacitor in the amplifier going short circuit and blowing up. That repair is another story.

After being out of radio for a number of years, and being a bit rusty, I decided that this was a great project to get back into the technical aspects of radio. After all I had a full call (Advanced) licence. I had the circuit diagram from the original manual. This is also available as a download from the web and has the benefit of being able to be magnified, thus I could also write notes and add voltage levels and the like. I still had my old trusty Fluke 77 digital voltmeter (circa 1983) and had recently acquired an old 400 MHz oscilloscope via eBay.

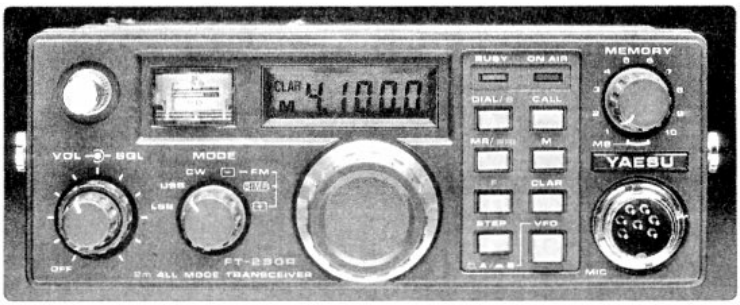


Figure 1: The FT-290R transceiver

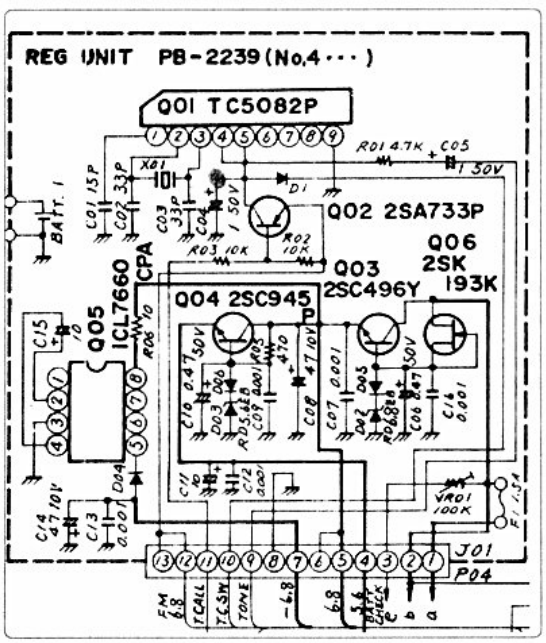
My poor old FT-290R was silent. Turning up the volume and playing with the squelch yielded a few crackles and bangs on the speaker. When tuning in on an FM repeater channel that was active I noticed that the S meter was at full scale deflection when there was signal. I selected CW, USB and SSB with the same results. The RF and IF stages seemed to be working correctly, but there was no audio output. OK, so it was the audio section.

I opened up the rig and removed the battery section. I had replaced the D cell batteries and carriers with two sealed six volt lead acid batteries when I first used the rig. Fortunately these batteries had not leaked but they were 'as dead as a dodo' so they will go to the local council depot for environmental disposal. I opened up the top cover and was confronted with the most tightly packed circuit board that I have ever seen. Yaesu put a lot into this little radio and to fit it all in they used tiny components and packed them in tightly. Of course this was before surface mounting so they were all wire through-hole components.

First things first. Before launching directly into the audio unit I had a look at the regulator unit which generates various voltages, holds the fuse and backup battery and for some reason hosts the tone generator for the call function. All the voltages checked out OK though the -6.8 volts was a little low; so nothing further needed doing here. One bizarre thing was that my circuit diagram that came with the rig shows a chip (Q05 ICL7660CPA) that generates -6.8 Volts, whereas the downloaded schematic has a circuit made up of discrete components. The regulator board on my rig uses discrete components like the downloaded schematic. Maybe this is why the -6.8 volts was low.

I had to find the audio section which is dominated

Figure 2: The DC regulator circuit.



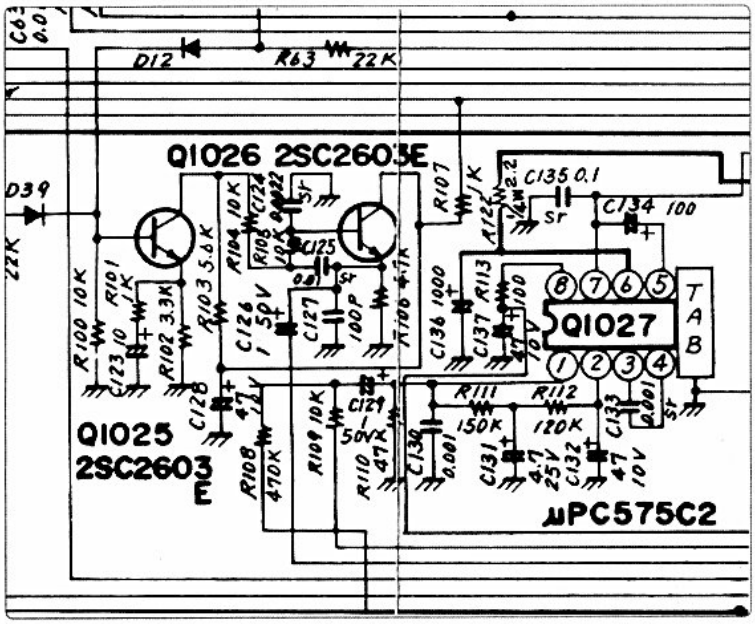


Figure 3: The audio amplifier circuit.

by Q1027, an uPC575c2 two watt audio power amplifier. I found and downloaded a specification sheet, but this was not very helpful, and I could not find any application notes. The chip was found at the top right hand side of the rig (with the front face pointing towards me). This chip must dissipate some heat as it has its own little heat sink attached, that is shown as TAB on the circuit diagram and it's fed directly by 12 volts. The chip had power (pin 6) and earth but no output. Input to the chip is via pin 1 and I wanted a more reliable input signal than waiting for somebody getting onto the local repeater, or trying to key and whistle, or using DTMF tones on my handheld. I did notice that the CW tone generator also feeds into this chip through R108. Turning to CW mode and attaching a key, I saw a stable audio signal on my new scope, on the –ve terminal of C129, a 1 µF electro, which is acting as a blocking capacitor to the input to the chip. By clamping together the wires attached to my Morse key I could have a continuous 700 Hz tone injected into the audio chip to aid fault finding. Directly on pin 1 I saw the attenuated signal and thought that the blocking capacitor had gone bad. So I replaced it. No; still faulty. Maybe R110, a 47 kΩ that goes from the input pin to ground is open or had gone wrong. So I replaced it. No; still faulty. Maybe the attenuated signal is actually correct onto pin 1, so why no output. Let's check the output on pin 7 and also on pin 5. Not very conclusive, but I will change C134, a 100 µF electro, which is a blocking electro between these pins. No, still not working. I looked at the filter chain between pin 1 and 2 on the input circuit again and decided that this was OK as signal was getting to pin 1. Pin 2 looks like another input and the filter chain was adding a 180 degree phase shift to the differential input to pin 2. Another electro C137, 47 µF, was replaced - this hangs off R113, 100 Ω, on pin 8. This circuit turns on the chip only in CW or FM mode and this still had no effect, and the audio amplifier was silent. OK, so the chip must be bad. I searched around on the web and luckily found a supplier in Australia who still had supplies of this old chip. I successfully, miraculously, managed to de-solder the chip and plonked the new one in, and expectantly turned on the radio. Nothing, still broken, zilch! I was depressed and thought I had better go rip up my amateur licence!

I re-read the specification sheet for the audio amplifier and compared it with other more modern chips. Still no help, though the 180 degree phase change circuit had disappeared on later chips. OK, let's go back to first principals. I looked at the internal circuit diagram of the chip and realized that pin 2 was not a differential input, but a power line, and the 180 degree phase shift network was a biasing/filter chain to pin 1. It had nothing to do with a 180 degree phase change at all. Furthermore, the DC voltage at pin 1 at was not obeying the voltage divider law between resistors R110, 47 kΩ, R111, 150 kΩ and R112, 120 kΩ. It was too low. My suspicion then led to electros C131, a 4.7 µF electro and C132, a 47 µF electro, that act as the filter capacitors in this chain of components. If these were leaky then they could be bleeding current to ground. I replaced them and was rewarded with a pure sweet tone from the speaker. It was working. That was the problem.

Hooray! Reviewing and contemplating what I did right and wrong, I can see that I jumped to the wrong conclusion regarding the chip as I did not understand how the chip worked. Oh well, it is a pretty old chip, and modern chips doing the same thing do not need this external bias chain, so I let myself go a little astray here. So it seems that the electros were going dry and leaky and this caused a low bias to the input of the chip.

Hooray, I have fixed my rig. OK, a few dead ends but it is now working. I tuned to my local repeater, still in CW mode and heard the typical buzzing sound of FM coming through a SSB demodulator. I turned the dial to FM and out came crystal clear speech. Ha! - just an audio problem. As I listened however the voices disappeared and the squelch came on. Ay...what? The S meter was still full scale. I switched back to SSB and got the usual buzzing sound and then switched back to FM where I heard clear voices but again they disappeared after 30 seconds or so. So what is wrong? It must be the FM demodulation section as signal is getting through on sideband.

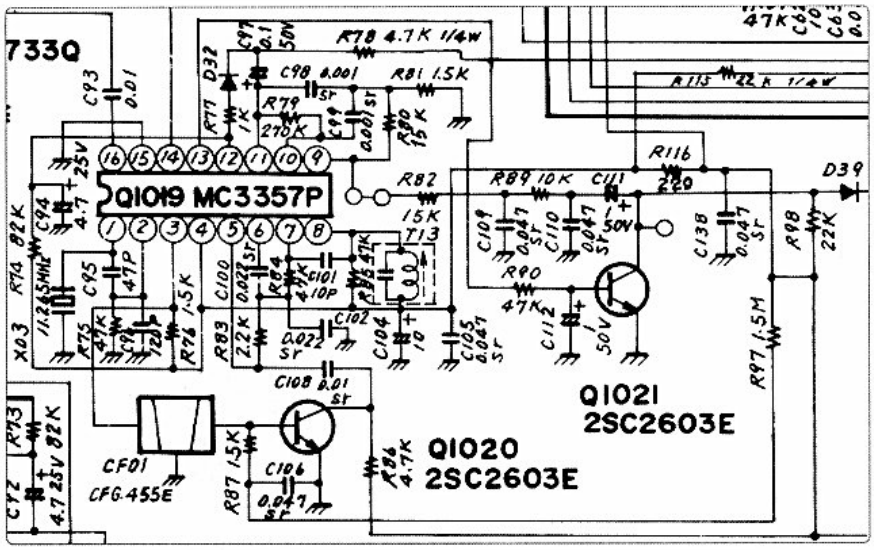


Figure 4: The FM demodulator.

The FM demodulator chip Q1019 (MC3357P) has been superseded a couple of times since the 1980s, but its children and grandchildren operate in pretty much the same way, and there are plenty of application notes available. One of the variants even had waveform pictures for each pin! Fantastic! Finding it on the circuit board was not obvious as it is hidden below the bundle of wires that lead from the front of the rig to the back. Again everything jam-packed, but with plentiful information on how the chip worked, this should be easy to fix!

MC3357P description

10.81 MHz comes into pin 16 from the first IF section to be demodulated by the chip. An internal Colpitts oscillator is frequency controlled via pins 1 and 2, crystal X03, and 11.265 MHz is mixed with the 10.81 MHz input signal to create a 455 kHz second IF, which is output on pin 3. This goes to a ceramic filter, CF01, with a 7.5 kHz bandwidth and passes through IF Amplifier Q1020 (2SC2603E) which gives the signal a little boost to compensate for the filters insertion loss. Pins 5, 6 and 7 form a five stage amplifier/limiter where the second IF signal is amplified and any AM modulation is rejected. FM is detected using the quadrature coil on pin 8. Audio is finally output on pin 9. A portion of the output signal is fed into an op amp set up as a noise amplifier, which is configured by components attached to pins 10 and 11. Noise is detected by D32 to produce a noise voltage in pin 12 which can be adjusted by the squelch potentiometer to control squelch level. When noise is detected, pin 13 goes high which turns squelch transistor Q1021 (2SC2603E) hard on, thus short circuiting any signal to ground and squelching the audio that is normally delivered via D39 to the audio amplifier section. Pin 14 meanwhile goes low and this is detected by the CPU to control memory scan functionality. De-emphasis is provided by R82, R89, C111, C109 and C110. Pin 4 is the positive supply rail and pin 15 is ground and these pins play a big part in the next section.

OK so there is a decay type problem here. This smells like another electro. I started with the supply voltage at pin 4. The power supply voltage is sourced from FMR6.8, FM receive 6.8 V, so it is only there in FM receive mode. When I changed to SSB this became zero volts, and when switched back to FM pin 4 jumped to about six volts then decayed to 4.5 volts. On the oscilloscope the supply volts was jumping around and noisy. Something was bleeding away current somewhere and not filtering. FMR6.8 voltage is fed to the chip via a 220 Ω resister, R116, and filtered by a 10 µF electro, C104. So the electro had gone leaky, I thought, and ripped it out and replaced it. Still I had the same problem. I replaced R116, the 220 Ω resistor as I thought it may have gone high, but with no success. There are quite a few electros around this chip so I took the opportunity to replace them all based on the audio amp experience. One problem I had was that Yaesu really did pack this board and managed to source very small miniature electrolytic capacitors. The only electros that I could get were still small, but not miniature. I did not have enough space to replace the old electrolytics with new ones. The solution was that we can now get monolithic ceramic capacitors up to 1 µF, and I used 3 of these, instead of the low valued electros. I researched replacing electros with monolithic capacitors on the web but could not find any information that it was good or bad, so in the monolithics went. This freed up enough space for the other bigger electros.

Unfortunately still no go. Next to the big filtering capacitor, C104, is another small decoupling capacitor labelled C105 0.047 sr. In the parts list sr is expanded to semiconductor. A semiconductor capacitor! I had never heard of this and neither had the web. I was a bit worried but it looked like a ceramic, so out it came and in went a monolithic. Still not working.

OK so now it really is the chip. I managed to get a couple of MC3357P from an Australian supplier and soldered in an IC socket, just in case, while I was waiting for the postman to deliver the new chips. I excitedly placed a new chip in the IC socket, turned on and..... same problem - the old chip was perfectly OK. The lesson I am learning here is that chips are quite resilient with age and ripping out a chip is really the last resort. However, having a socket here proved to be very useful. The circuit is such that you can power up the radio without having the chip installed.

Continued on page 19

VK3news

Geelong Amateur Radio Club - The GARC

Tony Collis VK3JGC

Museum Weekend and World Amateur Radio Day

The Marconi Hut where it all took place.

Lou VK3ALB.

This year the two events were coupled over a weekend at the Queenscliffe Maritime Museum where the administrator and Hon. Secretary June Negri enthusiastically supported the club's activities over the two days. This included us erecting a permanent mast and pulley system for the G5RV antenna outside of the Marconi hut. Whilst we had several interested visitors during the period we were slightly done down by the nearby Thomas the Tank Engine event that was also going on that weekend in Queenscliffe!

The operation as VK3ATL, the club call sign, mainly on 40 m as the band was very active and VK1 to VK7 were worked quite comfortably but by mid afternoon 40 m was subject to very heavy QSB.

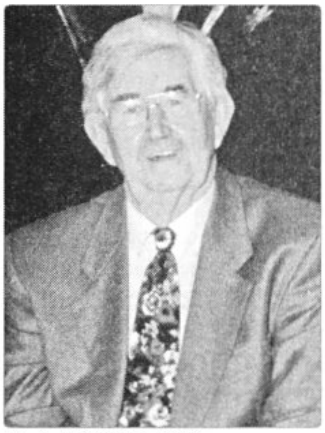
The 2 m band was also catered for using a ground plane antenna rather than a Yagi.

Inside the museum the GARC had contributed a lot of radio equipment reflective of historical maritime communications and placed it in a show case; amongst which was an Eddystone 640, prevalent in the 1950s, a Codan 7007 AM transceiver from the 1970s and a radio for ships inflatable life rafts and life boats, with a built in generator.

Radio receivers and Transceivers loaned to the museum by members of the GARC.

Geelong Regional Museum

At Osborne House, situated north of Geelong, is the Geelong Regional Museum from which the club has operated in previous years, but this year was only a static display of historical radio equipment loaned by club members.



Jack VK3ALP (SK)

Jack Cations VK3ALP – SK

The family of Past President Jack Cations generously donated his radio equipment to the GARC to use or dispose of for the benefit of aspiring radio amateurs.

For its part the GARC will use the bulk of it for training purposes and dispose of the balance by sealed bid tender.

To commemorate this donation the GARC is indebted to Paul VK3HRT, at Corio Engraving for designing the plaque which will sit alongside a framed photo of Jack; to be installed in the club house lounge.

My FT-290R repair adventure

Continued from page 17

This means that it was easy to measure all of the unloaded voltages at the chips pins. I did this and still noted that pin 4 still dropped, but now to only 5.5 volts not 4.5, and with no noise or bouncing. I concluded that the problem was still there and the higher voltage was due to the chip not drawing its nominal 2 mA current. Thus 3 mA was going somewhere else. I put the chip into yet another free IC socket and pulled various pins out of the socket, thus eliminating parts of the chip, and then plugged this into the socket that was soldered in piggy back style. I ended up with only pins 1, 11.265 MHz local oscillator in, pin 2, 11.265 MHz local oscillator out, 3, output to ceramic filter CF01, 4, input from ceramic filter CF01 via an amplifier transistor Q1020), 15, ground and 16, 10.8 MHz input, connected. Still the problem occurred with low DC voltage and the jumping up and down I noticed was related to the input signal strength. Weird!

The oscillator signals looked good on pins 1 and 2. Nice big sinusoids like the pictures in the specification sheet. I was getting input to pin 16. I managed to find a local two metre beacon as my test signal source and could just see signal on the oscilloscope. Besides I was getting audio output on SSB.

By exclusion there must be something screwy with the ceramic filter. There are two impedance matching 1.5 kΩ resistors, R75 and R87, on the input and output to this filter. These were replaced with no success. With the power supply decaying and bouncing all the time, it was hard to see whether the signal was getting through the filter and driving the following amplifier. DC wise the transistor looked OK, with the base at 0.6 V. It must be the ceramic filter. Now I had made a couple of wrong assumptions about chips and I guessed that ceramic filters would also be pretty stable, so I did not want to remove this filter, as a replaceable part no longer is available. If I needed to change this filter I would need to buy a similar specified surface mount device and fettle a way to get it into position, or put a plea out on newsgroups to see if anyone has an old filter still laying around after 20 years - CFG655E anyone? I did not want to de-solder this filter unless I was absolutely certain. On the foil side I found the track that led to the input and with some trepidation I cut this track with a scribe. I figured I could always solder a bridge over the track. I monitored the voltage on pin 4 and it became rock solid stable at six volts. Something in the ceramic filter was dragging the supply down. To test to see if all of the following stages were OK, I jumpered across the filter with a 56 pF capacitor that I had lying around. I got a tone from the speaker and everything else seemed to work OK but, of course, without the benefit of a narrow passband

filter. Oh well I need a new filter. Before heading down this route I just decided to bridge the track I cut with a 1 nF monolithic capacitor on the track side, just to see. This meant that the ceramic filter was no longer DC coupled to the power line and, miracle of miracles, it all worked perfectly. I got filtered signal. I could listen to FM signals for hours and not have a bouncing power supply at pin 4 or decaying audio. Hooray, I have fixed my rig. OK a few dead ends but it is now working. That crystal filter is a bit worrying however and I will put out a plea for a new one just in case.

All I had to do now was to get the radio back together and start using it. Because of my uncertainty in using monolithic caps to replace low valued electros, I did not directly replace them immediately into their correct locations on the board but soldered them onto the foil side. This meant they were easy to de-solder, if necessary, but also provided handy connection points for the oscilloscope and multi-meter probes. I de-soldered them all, put them into the correct locations, soldered them in and turned on the radio. Success, it all still worked, except, err, hold on, the squelch wasn't working very well anymore. I must have done something whilst de-soldering and re-soldering. Maybe I pulled out a wire from the component side. No, all still connected! Let's look at the squelch circuit then.

Squelch

Squelch detection is provided by the FM demodulator IC with pin 13 going high when the noise filter detects noise. Pin 13 then drives the squelch switch Q1021 (2SC603E) hard on. This is a tiny transistor (of course) which when turned on, shorts out any noise to ground, rather than go to the audio amp. The voltage was going high on pin 13 and there was a voltage drop across R90, 47 kΩ, which drives the base. But the base of the transistor was not at 0.6 volts anymore. It was around 2.3 volts. Squelch was kind of working with loud noise un-squelched, and partial noise when squelched. It looked like the tiny transistor has been fried when de-soldering the capacitors, and subsequent cleaning up of the holes with de-solder braid. De-soldering C112, 1 µF, and cleaning up its hole, which is directly on the base of the transistor, would have been the culprit. A modern replacement is available, BC639, with roughly the same specifications, and the same pin outs, and this replaced the old transistor. Physically the BC639 is much bigger (of course)! Success, squelch returned to normality. The radio now receives on FM and squelches properly.

Battery backup

Early on in repairing the FM section I got fed up with having to redial the frequency back to my test frequency, away from the 147 MHz local repeater, which is the default frequency on turn on. The old backup battery was 20 years old, flat as a tack and did not leak, luckily. This battery is soldered in with solder tabs attached to the battery. I did not even try and get a direct replacement with the same tabs but I found a similar battery of the same size, a CR2032 which is a bit fatter, with tabs. The tabs were in the wrong place and needed re-bending and reshaping with side cutters and a file but I managed to get one electrode directly soldered into the circuit board and connected the other with a bit of hook up wire soldered to the refashioned tab and into the circuit board. I did contemplate putting a button cell holder in, but there is not a lot of space and I thought that soldering was more secure. I replaced all of the old Mylar insulating film that was falling apart with new insulating tape on the regulator board and computer board. Easy.

Putting it all back together

The top and bottom covers have some rubber sponge to hold things tight and maybe provide some sound proofing. This had degenerated quite badly and when I pressed it with my finger it partially returned to a bituminous substance. It was reverting back to oil. I found a couple of mouse pads at a local stationary store. A fat one and a thin one. I cut these to the same size as the old sponge and used contact adhesive to glue them on the covers. I re-soldered the loudspeaker cable back to the loudspeaker as this was detached to aid in access to the circuit boards.

Because I am going to use this as a shack radio and not go walkabout with it I decided to return the rig back to the original battery arrangement. There are two plastic C cell carriers that hold four cells each and these were connected back to the recharge port. The carriers were held in place with double sided foam tape. I added some insulated bullet connectors so I could remove the covers without having to de-solder any wires.

Transmit

On the transmit side everything seemed to be working OK. The only comments have been that the deviation is a bit low and this may be just an alignment. Looking at the circuit, the chip that does the speech amplification for FM is surrounded by electrolytics, so one or two may be leaky and causing deviation to go low. I'll attack this at a later date.

Conclusion

I have now been using this radio for the past month and am happy to say it is still working OK. I am also pretty chuffed that I managed to fix it and I re-learnt a lot about radio again. I would recommend to any amateur who has an old radio that is not working is to dive in and try and fix it. The secret for me was to not give up and keep looking, after excluding possible causes, and not become too disheartened when making some wrong assumptions. Oh, and it only cost me about two hundred dollars to save this fifty dollar rig.

Coming Events

10-12 June
VK4 – Far North and North Queensland Amateur Radio Gathering at King Reef Resort Kurrimine Beach.

9-10 July
VK3 – GippsTech 2011 VHF/UHF and microwaves technical conference, Churchill.

16 July
VK3 – Gippsland Gate Radio & Electronics Club Hamfest, Cranbourne.

Silent Key

Geoffrey Danvers Partridge VK2VU

I would like to inform you that my father, Geoffrey Danvers Partridge, passed away on 9 April 2011 at the age of 96 years.

Dad was involved in radio and communications from a very early age and his love of amateur radio brought him so much happiness throughout his life. When my sister was teaching at School of the Air in Alice Springs, before email and mobile phones, we had regular skeds with her. This came about as our Dad encouraged her partner, Joe Dalrymple (now deceased) to gain his amateur radio licence. Joe was an American, working at Pine Gap at the time, and just last year we passed on all Joe's communication texts to the local Port Macquarie Amateur Radio Club.

Following is a passage from the Eulogy read by my mother at the funeral:

'Amateur Radio was a huge part of Dad's life - VK2VU was his call sign and now it lives on in their email address. I remember us kids taking shifts to keep him awake through 24 hour competitions where the operators tried to make as many contacts as possible. But apart from talking to people all over the world, he assisted in locating lost people, hikers, rescues, Mayday calls, SES and police searches, and possibly saved a man's life in Alaska who was injured, stuck in the snow, and unable to contact local communication. He helped pass messages during flood times when phone communication was out and helped the police in passing messages for obtaining food for the town. One time he even helped Dick Smith find where he was, when flying his helicopter solo from England to Bundaberg (Dick was not lost, just unsure of his location, but Dad was able to tell him he was passing Avon Downs). On thinking about Dad's life we worked out that he was actively into radio communication for over 75 years!'

Because of the radio, mum and Dad often had amateur radio operators and partners pop in for a cuppa or lunch when they lived in Singleton and they met others on their travels throughout Australia. In recent years, Dad's dementia meant he was not up to continuing his skeds and once we moved my parents to a retirement village in Wauchope to be nearer family a couple of years back, Dad was no longer able to listen on the airwaves, but we wanted you to know what a huge part the radio was in his life.

Yours sincerely,

Leone Hill (daughter).

Building and using a touch keyer

Grant McDuling VK4JAZ

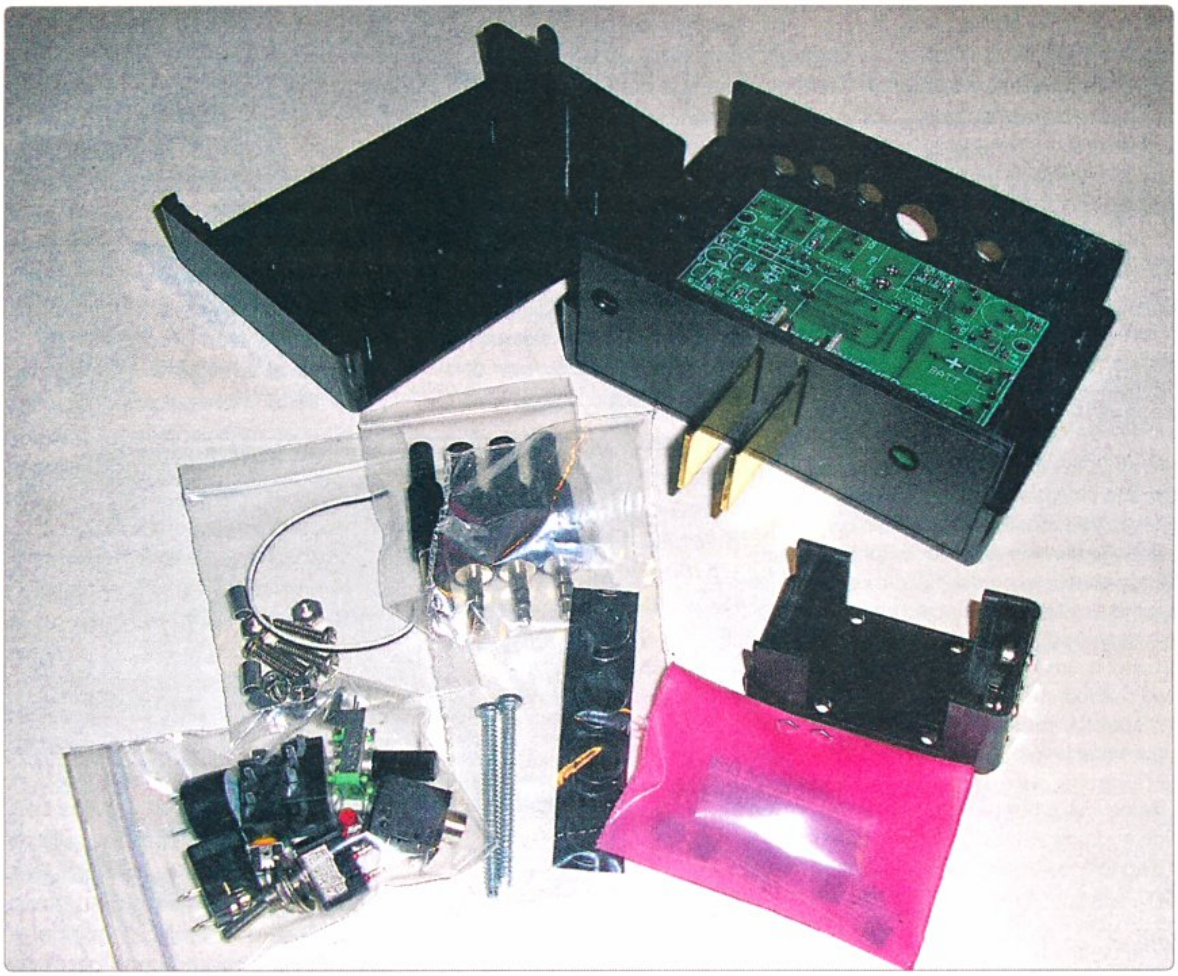
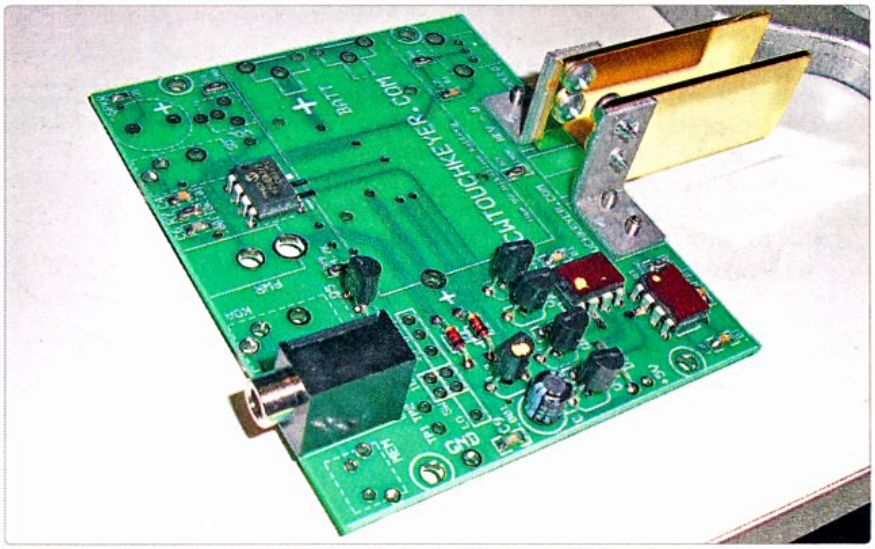


Photo 1: The kit as it arrived.

Taking part in the recent WIA Centenary QRP Contest highlighted a need in my shack; I could do with a side tone generator. The problem arose as I had decided to use my trusty homebrewed 125 mW Pixie 2 transceiver. I have always been amazed at the performance of this minimalistic rig, but operating without a sidetone to allow you to hear the code you are sending is challenging to say the least.

So I decided to see if I could rectify this in time for the next QRP contest. A quick trawl of the web brought up numerous schematics for simple keyers, but the one that caught my attention was CW Touch Keyer, *http://www.cwtouchkeyer.com/*

Photo 2: Work in progress, populating the PCB. The gold plated paddles and surface mount components were pre-installed.



I was immediately attracted to the Model P1, which is a touch paddle with built in electronic keyer. It is also available in kit form. As an avid homebrewer, this looked like the solution to my problem.

After placing my order, the kit arrived from the US within a week. Everything was there, so I was raring to go.

The kit went together effortlessly and worked first time. This, I have to admit, was something of a rarity for me as I always seem to have a little troubleshooting to do before I can get kits to work. So, what exactly is a touch keyer and what is it like to operate?

This little gem, which sells for US$99 plus around US$16 for shipping, is basically a paddle without mechanical movements. The paddles do not move at all and do not rely on the resistance of your skin to work. The paddles, incidentally, are solid gold plated. They are super responsive and produce flawless CW.

Another big plus for me is that there are no annoying clicking sounds to distract me when in the thick of a long over. There is a tuning pot which allows you to adjust your speed from anywhere between 5 and 50 words per minute. Power is supplied via an onboard 9 V battery or an external power source of anywhere between 6 - 12 V DC.

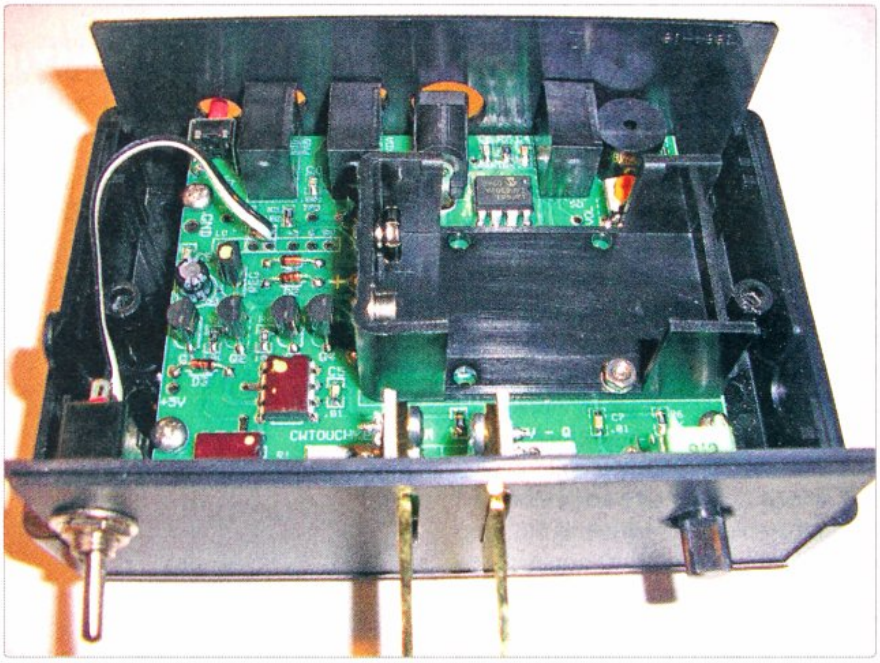
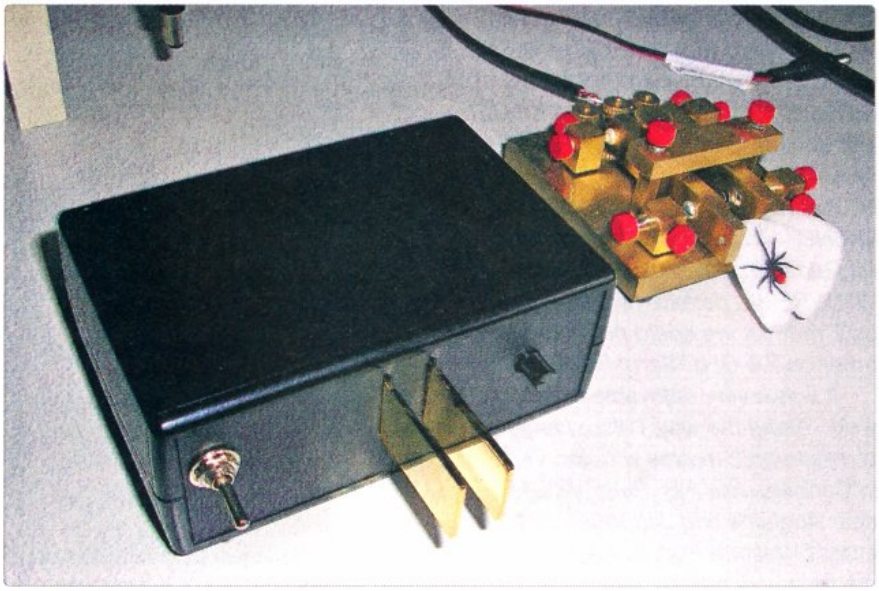


Photo 3: The completed PCB inside its custom enclosure. Note space for the internal 9 V battery, which is optional.

The touch keyer is also highly programmable, with two 80 character memories in addition to an 80 character call sign memory. Another nice feature is that it is easy to reverse the paddles for dots and dashes if you so wish. I know some right-handed operators like to use their left hand for operating the paddles as this frees up their right hand for writing.

Photo 4: The Touch Keyer alongside the more traditional Black Widow paddle.



The side tone, which can be switched on or off, can be heard from a small internal speaker, something I will be using with the Pixie 2. Another thing I like about this keyer is that it can be used in three ways, as an electronic keyer on rigs that don't have in-built keyers, as paddles only with rigs that do have keyers, and as a stand-alone unit using an external speaker. The keyer is also really heavy and does not move about on the bench during sending. It comes complete with a custom made weight that fills the bottom of the enclosure.

So, what is it like to use?

I join thousands of other operators who now swear by them. I have never experienced anything like it. No longer do I have to fiddle around trying to get a comfortable set of gaps on my paddles. With the touch keyer, this is a non-issue. There are no gaps to set. The paddles are self calibrating and are just perfect to use. I have often wondered how I managed without them. My code speed has improved nicely and I send more fluently. The paddles have an ultra-soft touch and have a smooth, quick and positive response. In a word, they are fabulous.

VHF/UHF - An Expanding World

David Smith VK3HZ
vk3hz@wia.org.au

Weak Signal

Early in April, there was some enhanced propagation across the Bight. On the evening of April 5, the VK6REP 2 m beacon in Esperance was heard by Jim VK3II. He then attempted a JT65 digital contact with Derek VK6DZ but only received one decode. On 2, 3, 4 and 5 April, Phil VK5AKK reported hearing the Esperance beacon. However, no contacts resulted.

On the morning of April 17, Norm VK7AC worked 1000+ km into the Adelaide area on 70 cm, having contacts with Peter VK5PJ and Phil VK5AKK.

Conditions on the microwave bands in western VK3 were excellent on the morning of April 26. Colin VK5DK in Mt Gambier worked Alan VK3XPD in Camberwell on 10 GHz SSB, reporting S9 signals.

VK3 2.4 GHZ QSO Party

In what is becoming something of a tradition (well, it happened last year on the same day), Easter Monday saw the second of the VK3 2.4GHz QSO parties. This year, it expanded somewhat into a VK3 and VK5 event, with activity on a number of microwave bands. Michael VK3KH reports:

Last year at Easter, a group of Victorian microwave operators decided it would be good to give our 2.4 GHz gear a bit of a shakedown, so we set up at different locations early on Easter Monday, and for several hours had a ball making contacts with each other. Because we had such a good level of involvement last year, it was decided to again repeat the activity this year. I set myself up on the side of Arthur's Seat on the Mornington Peninsula (a favourite portable location). The weather was spectacular, with no wind and bright sunshine. Oh, life is tough!

Mike VK3KH's setup on Arthur's Seat.

I was ready just before 8 a.m. with 2 metres for liaison and 8 W from my transverter and gridpack on 2.4 GHz. A check of the beacons on 2 metres and there was VK5VF, the Adelaide beacon at 5/2. Conditions were looking great. A quick contact on 2 metres with Jim VK5OM/p near Naracoorte and Bill VK5ACY at Bow Hill, confirmed things.

Then turning to 2.4 GHz, stations started to appear from everywhere. Over the next hour and half, I worked Ian VK3AXH, Ian VK3IDL and John VK3AIG (each with their own stations) on Mt Buninyong, Alan VK3XPD at home, Chas VK3PY and Lou VK3ALB just outside Geelong, Rob VK3MQ on Mt Dandenong, David VK3QM on Mt Rouse near Hamilton and Trevor VK5NC with the SERG Group near Mt Gambier. I also tried for Ralph VK3WRE but despite his 5/9 signal on 2 metres, we could not hear each other on 2.4 GHz. Sorry Ralph.

It was a very enjoyable morning's work. Along the way, I also managed contacts on 2 metres with Ian VK1BG in Canberra (via AE), Peter VK5PJ near Adelaide and Jim VK3II, just across Western Port Bay. You owe me for a new needle, Jim.

Eleven stations operational on 2.4 GHz is a very good effort. Thanks for all making the effort. A number of the guys had taken other bands as well, most notably 10 GHz, and continued on trying for contacts on these bands. I unfortunately had another commitment and was packed up and on the way home by 10 a.m. I am looking forward to next year!

Colin VK5DK with the SERG group in Mt Gambier reports contacts on 2.4 GHz with VK3QM/p, VK3PY, VK3AXH, VK3IDL/P, VK3AIG/p, VK3KH/p, VK3ALB/p and VK3MQ/p. The paths to VK3KH and VK3MQ were 425 km.

That is an impressive level of participation for an event that was only organised a week before. With the increasing number of people now constructing microwave gear and operational on the bands, it looks like there is now a lot of interest in these sorts of events, where people can get out onto hilltops knowing there will be plenty of stations to work. Last year, an attempt was made to organise regular monthly Microwave Activity Days (MADs) but

Rob VK3MQ on John's Hill last year

it seems that monthly is perhaps too often for many. Currently, there are only the three VHF/UHF Field Days, which are not exclusively dedicated to microwave activity and have the pressure of being a contest. There is also a hole of around six months between the summer and winter events. A regular Easter social event could fill that hole quite nicely for a national microwave-only activity day.

ZL3TY Sporadic E on 2 m in January

Bob ZL3TY, located in Greymouth on the west coast of the NZ south island, had an interesting time in mid January with some excellent sporadic E contacts into VK including his best ever 2 m contact to Garry VK5ZK in Goolwa. Here is an extract from his log below.

Passing of Cecil Andrews VK6AO

After suffering ill health in recent years, Cec Andrews VK6AO passed away on Friday 15 April. Although I never had the privilege of working Cec, he was a leading force in the VHF/UHF area for many years. Wally VK6KZ writes:

Although limited in operating as VK6AO in recent years, following his first stroke, Cecil Andrews will be remembered for his tenacious operating on 50, 144, 432 and 1296 MHz. Many operators in VK3, VK5, VK6 and VK7 would have heard him on these bands and would have been thrilled to work a VK6 in Perth!

Those in Perth would know his marvellous skills in construction of much of his equipment, his tower and his antennas. His construction of U-shaped omnidirectional antennas for 144 and 432 MHz for the WA VHF Group beacons in Perth, Mt Barker, Dampier and Esperance have stood the test of time.

Vale Cec!

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Log extract from Bob ZL3TY.

Date	Time	Callsign	Locator	Tx	Rx	Mode	Distance
13/01/2011	03:17	VK2EI	QF68	53	53	SSB	2017+-
13/01/2011	03:19	VK5ZK	PF95	51	51	SSB	2917+-
13/01/2011	03:20	VK5NY	PF94HS	53	53	SSB	2913
13/01/2011	03:24	VK5AKK	PF94IX	51	51	SSB	2895+-
13/01/2011	03:26	VK2MAX	QF68JV	59	59	SSB	2063
13/01/2011	03:29	VK2ZT	QF57WF	59	59	SSB	2008
13/01/2011	03:30	VK5GF	PF94HK	57	57	SSB	2897
13/01/2011	03:30	VK2AMS	QF68FC	55	55	SSB	2027
13/01/2011	03:33	VK5DK/2	QF68	55	55	SSB	2017+-
13/01/2011	03:34	VK5NC/2	QF68	58	58	SSB	2017+-
13/01/2011	03:35	VK5JL/2	QF68	58	57	SSB	2017+-
13/01/2011	03:36	VK2ZTV	QF57	59	59	SSB	2009
13/01/2011	03:37	VK2KOL	QF56	55	55	SSB	2023+-
13/01/2011	03:38	VK2XTT	QF56IF	59	59	SSB	2030
13/01/2011	03:39	VK2BCC	QF56	59	59	SSB	2000
13/01/2011	03:40	VK2EEC	QF55	59	59	SSB	1961+-
13/01/2011	04:18	VK2TS	QF55KL	55	55	SSB	1971
14/01/2011	01:14	VK4OX	QG63KF	55	55	SSB	2410
14/01/2011	01:16	VK2DVZ	QF68GD	51	51	SSB	2025
14/01/2011	01:17	VK1DJA	QF44MF	55	55	SSB	2044
14/01/2011	01:18	VK1BG	QF44MS	52	52	SSB	2073
14/01/2011	01:19	VK1KW	QF44MT	52	51	SSB	2076
14/01/2011	01:20	VK2BHO	QF55KK	57	58	SSB	1968
14/01/2011	01:22	VK4ARN	QG62NI	51	51	SSB	2320
14/01/2011	01:40	VK2QO	QF55	559	559	CW	1961+-
14/01/2011	02:20	VK2ZT	QF57WF	55	55	SSB	2008
14/01/2011	02:26	VK2AMS	QF68FC	54	54	SSB	2027

Digital DX Modes

Rex Moncur VK7MO

New experimental ISCAT mode for microwave aircraft scatter

Following success in using ISCAT for 10 GHz aircraft scatter, Rex VK7MO and Dave VK3HZ suggested to Joe Taylor K1JT that it might be possible to improve the mode for this application. The main limitation of ISCAT is that it uses 1800 Hz bandwidth and that leaves little room for the signal to move around with Doppler in a typical VHF transceiver that may have a bandwidth from only 400 to 2400 Hz or about 2000 Hz. Rex and David have recorded Doppler shifts of up to 1000 Hz/min on aircraft crossing the path of propagation at right angles. It was suggested that a half speed mode, which would have half the bandwidth (900 Hz), would allow a useful variation with Doppler of up to plus/minus 500 Hz. A half speed version would use half size bins and should improve the performance by 3 dB at the expense of requiring bursts of signal twice as long. The present version of ISCAT works with bursts of around 0.5 seconds and most bursts of signal on 10 GHz aircraft scatter are a couple of seconds – so this should not be a problem.

Joe responded very positively but pointed out that running at half the bandwidth and half the speed would reduce the ability of the program to cope with Doppler variations by a factor of four but he felt he could overcome this by tracking the Doppler. Joe produced an experimental version called ISCAT-A. After extensive simulation testing (using a swept signal generator to simulate the Doppler) it was tried in field from the grid square QE47 near Swansea Tasmania to Werribee in Victoria. While this path is only 10 degrees off the Hobart-Melbourne flights and thus does not test the program with rapid Doppler variations, it did show the value of the new sub-mode with an easy completion on a single aircraft pass. Fig 1 shows the signal to noise ratio obtained on this path.

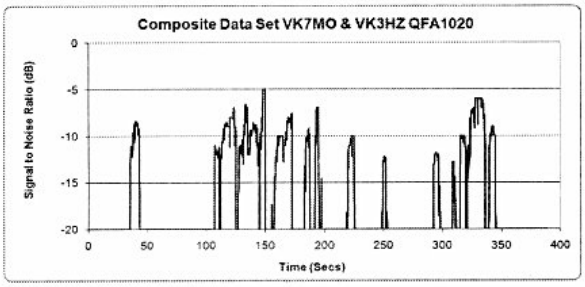


Figure 1: 10 GHz aircraft scatter signals from Werribee in Victoria to Swansea in Tasmania

Note that the signal comes in bursts of a few to several seconds and lasts around five minutes on this single aircraft pass. The new sub-mode also demonstrated a useful performance improvement and will work to around -13 dB on a single burst. As seen from Fig 1 most of the bursts are stronger than -13 dB and thus produce good decodes.

The next step is to test ISCAT-A with aircraft crossing at right angles and this will require a trip to the mainland. ISCAT-A is still under development with new versions coming out each time Joe gets feedback. Until tests are completed the new mode will not be made generally available but if you would like to test the latest version contact Rex VK7MO.

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

The Magic Band – 6 m DX

Brian Cleland VK5BC

During April good TEP openings from northern areas of VK to Japan, China etc became a daily event with a few openings extending to southern areas of VK3, 5 and 6. Also several contacts were completed between far northern VK4s and Darwin VK8s to KH6.

Dale VK4SIX from Atherton reports that he and John VK4TL have been working into Japan, China, Taiwan, Korea, Hawaii and the Philippines most days up until late in the evening.

On April 3 Jeff VK4BOF near Innisfail worked JA2BNV, JI1CUL, JA1QOP, JH1WHS, JF3DRI and JF1KJC all on 50.120 with 5/9 signals or better, not bad for a K3 + 80 m inverted V.

April 7 saw KH6 stations making contacts into northern VK4 and VK8. Richie VK8RR and Mark VK8MS both in the Darwin area worked Art KH6SX and Kevin VK4BKP in Mackay worked Fred KH7Y. Several other contacts from these areas were made into KH6 during the month.

Interestingly on April 7 Phil VK4FIL in Brisbane decoded JH0IXE in PM85 on 50.2930 WSPR at +10. This would be one of the first WSPR decodes on 6 m outside of VK; well done Phil.

April 12 Victor E51CG in Rarotunga worked many XEs, great to see the activity from Mexico and let us hope it extends to VK in the near future.

In VK5 there were several JA openings during the month although most were short in duration with weak signals. JAs were worked on 3, 5, 6, 7, 8, 9, 13, 22 and 30 April. The highlight was the opening on the 13th when up to five stations from China were worked on SSB and CW including BA4SI, BD9BU, BD4QH, BD9BA & BG0GE/9 as well as several JAs between 0700 UTC - 1030 UTC. During this opening David VK5AYD from Coober Pedy was also being heard & worked in the Adelaide area with S9+ signals via short Es skip and later in the opening the band opened to VK4 with VK4EK, VK4WTN worked by several VK5s. The 14th also started well with good early morning opening from VK4 to VK5 and followed by good contacts from VK5s to David VK3AUU and Andrew VK3OE.

From VK6 Rod VK6KP reports a good month in Karratha:

01/04 Evening TEP - JA 2 and 6 plus BD9BU

02/04 Open all afternoon JA4/5/6

03/04 Open afternoon and evening

06/04 Very strong afternoon opening to JA1/2/3/4 all 9+ Good evening TEP DS2KGJ/BD9BU and BV1EJ/VR2XMT both calling CQ plus 9W6RT (5/4) on 115 with huge JA dogpile!

07/04 Another very strong afternoon opening JA0/1/2/3/4/6 followed by a good TEP evening opening. JAs/VR2XMT and BV2YA/B on 50.001

10/04 Late afternoon JAs and BA4SI

11/04 Late afternoon/evening JA5/6/BD9BU and DU heard. XV2RZ on 50.098 working JA. Still open afternoon 1300 Z. TV 48.251/244/260 offsets heard from Middle East and 89.9 from Shanghai?

14/04 Evening TEP Many JAs and BD9BU calling CQ 110 1225z.

15/04 Evening TEP Many JAs plus DS2KGJ, DU/PA0HIP all good strength.

16/09 Afternoon strong opening JA1/5/7/9 all S9.

17/04 Very strong afternoon and evening TEP opening to JA.

22/04 Strong afternoon opening to JA1/2/3/4/5/6

23/04 Evening TEP opening. Number of JAs, only worked JE6LMH 5/9 at 1015 Z

29/04 Strong afternoon opening to JA. A lot of crud etc across 50. Worked JM6JJA/6 599 both ways.

Meanwhile Rex VK6ARW in Exmouth North West Cape says he is going through a learning process and enjoying 6 m during this process and reports the following 6 m activity for April:

05/04/2011 8 JAs between 0658 – 0707 UTC

07/04/2011 16 JAs between 0505 – 0618 UTC

09/04/2011 51 JAs between 0639 - 0801 UTC.

Further south from the Perth area Andy VK6OX reports:

April 1 saw an opening to JA from this QTH with two stations worked at 0901 Z and 0919 Z. VK6IQ Glen, who is located about 50 km north of Perth, also worked a JA during this period.

On the 7th we had another good opening to JA from about 0600 Z onwards. Signals were up to S9

at this QTH and several stations in JA1 and JA3 were worked. VK6IQ, VK6ZKO and VK6DU also enjoyed the conditions with a good number of stations being worked on both SSB and CW. On the 9th, the band opened again and many JAs were worked by VK6IQ and others. (As luck would have it, I was recovering in hospital from elective surgery, so I missed out!!). Glen also worked HL1VAU in Korea during this opening. April 16 again saw an opening, with VK6IQ, VK6ZKO and possibly others getting amongst the action. The band was pretty quiet until the 26th, when a very brief opening saw Glen snag JO3UGX Ross although he reported signals were marginal.

VK6XLR Rick in Geraldton has also managed to work a few JAs.

Peter VK6KXW has been closely monitoring TV signals from further afield i.e. Middle East and Central Europe but to date has not managed any QSO. It is probably early days yet and the MUF is not getting to 50 MHz, not to mention the Sun's refusal to get its act into gear!!

Received a note from Lance VK6DU in Perth who says:

I am relatively new to 6 m and have now worked five countries, VK, ZL, A3, E5 and JA (since Jan 2006).

The following is a report of my 6 m JA QSOs (on CW) in April 2011:

14/04/2011 - JA1RJU, JI1CUL, JA7DUI.

16/04/2011 - JH0HZO, JA1ADU, JM1WBB, JM1TWR.

Well done Lance.

Although April was not the best for meteor scatter, contacts continue to be made early each morning on 50.200 MHz. Liaison for these contacts is carried out on VKChat with contacts being spotted on VKLogger. This group was started and is organized by Brad VK2QO after he completed contacts with John VK4ZJB and Brian VK4EK two years ago and is still running as strongly as ever. Listen on 50.200 any time before 2200 UTC any morning and join in the challenge of completing meteor scatter contacts.

Please send any 6 m information to Brian VK5BC at *briancleland@bigpond.com*

Silent Key Arne Jansson VK4BRN

Arne Jansson VK4BRN is now a Silent Key, having died on 23 August 2010, in his 85th year.

He has not been active on the bands since 1991, when a combination of strong sunspot activity with resulting bad reception and his taking up lawn bowls occurred simultaneously. He was diagnosed with dementia ten years later and eventually gave up bowls too. However, he continued to read his *Amateur Radio* magazine, RNARS Newsletter and OTN. I even enjoyed the non-technical articles!

Arne led an extremely interesting life. He first qualified as a Radio Telegraphist in 1949 and worked at Bramma Airfield in Stockholm and in the Swedish Interception Forces north of the Arctic Circle, monitoring the Russian radio traffic. He then spent 16 years in the Swedish Merchant Navy as radio Officer/Purser/Accountant/Personnel Manager, etc., travelling the world in a manner of Swedish owned ships from the fruit boats to huge oil tankers, when life at sea was romantic and adventurous and civilised!

After retirement from the sea in 1965 and working for NCR in Stockholm and Sydney, he qualified as a chartered accountant/company secretary and worked as financial controller for shipping and broking companies until retiring in 1985.

Arne was introduced to the world of amateur radio by Tom Soundy VK2ETS in Merimbula in 1985. Tom had been in the British Merchant Navy. He was a very active CW operator on his Vibroplex as VK2AJD in Merimbula and Roselle, Sydney, until 1989 when he moved to Buderim Queensland and became VK4BRN. He worked Casey VK2CWS, Les VK2ALH, Eric VK2FYH, John VK2FUR, Gerry VK2CGA, Ken VK2LV, Dave VK2IJ, Keith VK2KEW and others in setting up the Snapper Island station which was an exciting and enjoyable time.

For someone with such an active nature and inquiring mind, the onset of dementia was tragic. He had always had a passion for music – jazz, swing, blues, gospel, classical, and miraculously his memory of and love for music never diminished, which was a godsend.

As you can imagine, I am very sad and miss him dreadfully.

Kind regards to all who remember him.

Kay Jansson

Scouts go bush for John Moyle Field Day

Miles Burke VK6FMAB

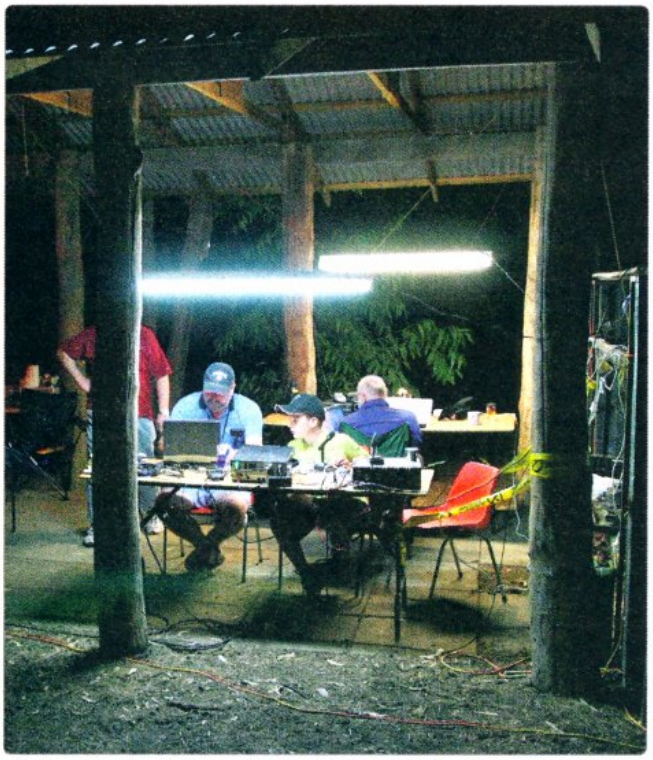


Photo 1: Late night contesting in the shack.

The 2011 John Moyle Field Day was a great opportunity for the Scout Communications and Technology Team based in Perth, Western Australia to combine our two interests; Scouting and amateur radio.

The Scouting experience came in handy when constructing our camp site, and living in the bush where the amateur radio knowledge amongst some of the weekend team came in handy when the contest began in earnest.

We arrived at our campsite early afternoon on Friday, bringing our trailer-based portable repeater and most of the gear we would need, replete with solar panels and the all-important coffee urn that was destined to receive a fair workout.

Like previous field days, the team chose the Manjedal Scout Activities Centre, a 184 hectare site amongst the beautiful Jarrah forest located midway between Jarrahdale and Byford, roughly 45 kilometres south of Perth.

Once we arrived, Bob VK6POP and Tony VK6HAM were quick to grab the fishing rods, and start the process of casting the antennas into the very high trees nearby. A collection of homebrew dipoles for the 80 metre, 40 metre, 20 metre and 15 metre bands were soon hoisted up into enviable positions overlooking the forest.

With the generator placed and humming a fair distance away, our two stations were constructed. One station was set-up for 40 metres, and the other arranged for the 80 and 20 metre bands. Each station was equipped with a radio, pens, paper, microphones, headphones and laptops running our chosen logging software, VK3AVV's popular VK Contest Log. Just as importantly, our tents and the other various cooking and lighting equipment were also organized.

We then settled back for a camp dinner, and further instruction for the younger members of our team, three 10 year olds, Davis VK6FAME, Prentice and Alex. These three recruits successfully passed their Foundation courses and exams that the team had held in January of this year, and for them this was really the first opportunity for them to get on air since then.

A quick refresher in radio etiquette and contesting rules and calling formats followed. Little did we know that in twenty four hours time, we would be amazed at how well all three young operators had morphed into seemingly seasoned contesting professionals.

The following morning, after breakfast on the barbecue, we counted the minutes down to 9 am local time, for the start of the contest. Propagation looked favorable for those of us on the west coast this year, which added to the excitement. Before you knew it, we were using our club callsign, VK6SH, swapping numbers, and punching away on the keyboards keeping our logs up to date.

The day continued with the three young recruits, as well as Bob, Tony, Ross VK6WW and myself, Miles VK6FMAB, taking turns on the microphone or as the support loggers.

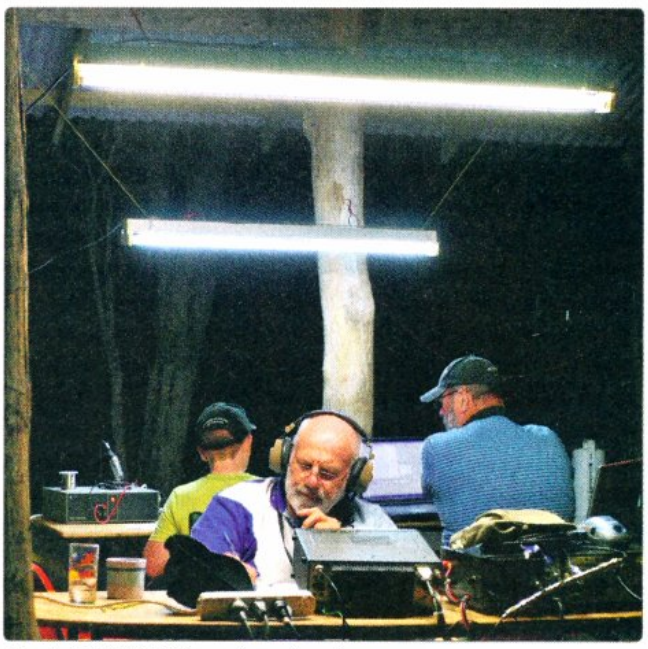


Photo 2: VK6POP on the microphone.

As the day continued, we had Mark VK6DY join us for the remainder of the weekend, as well as Cameron VK6FCAC and another youth member, Brendan VK6FREE drop in at different times for a chat. We also enjoyed the company of a number of other visitors from other local activities, who dropped past to see what the fuss (or at least, generator noise!) was all about. Even a few kangaroos were spotted showing an interest.

One of the memorable moments over the weekend involved VK6POP who records the weekly VK6 news broadcast, having to use his laptop in a caravan (the studio, he called it), to escape the constant sound of our CQ calls, and then driving 10 minutes in the dark to the nearest town to upload the file for broadcast the next morning.

Things often do not seem to go according to plan, and a number of software updates and file downloads ensued in the dark car park of a country town service station at midnight before all was good – a trying moment for the weary Bob, that is for certain.

We managed to keep the radios manned until around 12.30 am, when it was fairly obvious most of the eastern seaboard had retired for the evening. It was time to head to the tents and stay out of the chilly air.

At 5.00 am I woke, and lay in my sleeping bag whilst seemingly reciting 'CQ contest, CQ contest, this is Victor Kilo Six Sierra Hotel' many times, before realizing the voices were not actually in my head – Ross VK6WW had made an early start! His voice was being carried through the misty early morning air the 80 metres or so to my tent.

Photo 3: VK6FAME showing his late night logging skills.

Photo 4: The campsite radio shack for the weekend.

Not too long later, the radios were once again all manned, and we made that last ditch effort for the remaining hours until 9 am Sunday when the contest finished. All up, we ended with more than 550 points; not enough of course to get a place in the contest, but something we enjoyed achieving, and a goal for us to beat next year.

Having not participated before in a field day, I was unsure what to expect. Now that I have been lucky enough to have one under my belt, I can understand the enthusiasm from the rest of the team.

The field day is a great opportunity to hone those radio skills, as well as share a few laughs, stories and campfire recipes with fellow radio enthusiasts.

If you were one of the many we spoke with over the weekend, I thank you for answering our calls, and for the enthusiasm many of you showed when realizing you were conversing with a 10-year-old operator.

If you haven't participated before, I urge you to give it a go next year – it really was a load of fun and helps all of us appreciate the great outdoors.

The **Elizabeth Amateur Radio Club** has secured a display booth at the *Science Alive! Event*, being held for Science Week at the Adelaide Show Grounds – **Friday 5 to Sunday 7, August.**

We are looking for range of hands on and interactive radio and communication displays for the event which present our hobby to the public in an interesting and engaging manner.

Displays at last year's event included: stations for sending and receiving Morse, two stations for radio communications using SSB, the Project Horus weather balloon and payload, a 'bionic ear' (parabolic dish) and voice communications via IR LED modulation.

If interested, or would like more information, please contact Paul Schulz (*VK5FPAW@wia.org.au*)

The Whyalla ARC at the WIA National Field Day Sunday, 17 April, 2011

Peter Horgan VK5BWH

Photo 1: The Whyalla ARC set up in Gladstone Square, Whyalla, for the National Field Day.

The Whyalla Amateur Radio Club (WARC) participated in this year's National Field Day with Port Augusta club members and other local radio operators setting up portable stations in Gladstone Square, right in the city centre of Port Augusta. Port Augusta, sometimes called the crossroads of Australia, is situated at the top of South Australia's Spencer Gulf.

An early morning start was the order of the day so that antennas could be erected and operating displays set up before the public started walking through the square. Port Augusta Council allowed us to use an existing 10 metre flag pole to which we attached a pair of antennas, an off centre fed dipole and a 40 metre dipole fed with open wire line. Les Virgo VK5KLV set up his 'portable' field day station. Les has mounted an Icom IC-725 for HF, Yaesu FT-857D for 2 metres and 70 cm sideband, and an IC-228A for 2 metre FM into a 'drag and drop' self contained unit. Getting the station on air is as quick and easy as connecting antennas and a DC power source.

A home brew dual band vertical was used for FM contacts, a dual band Yagi for VHF/UHF sideband and a three element antenna for six metres. Conditions on these bands were less than ideal but Les did manage a good number of contacts, many through the 2 metre repeater at Port Pirie. Frank VK5KV managed many HF contacts from his new IC-9100 station set up in the Square's rotunda, using the OCF dipole.

The event attracted 30 to 40 visitors. While many showed a lot of interest we were unable to coax anyone to take the microphone and have a chat. The most memorable visitor was one 10 year old lad who dragged mum along to the display. Who knows, we may have planted the seed for a prospective amateur newcomer. We also had the pleasure of meeting George Wright VK3APL who is touring the area and enjoying what the Spencer Gulf region has to offer. Other hams that enjoyed the day were Larry VK5HBG from Whyalla, David VK5NOQ from Port Pirie and Tony VK5NMO from Port Augusta. Tony has been inactive for some time but is slowly getting back to enjoying radio again.

Was the day successful? How can we measure success? Is it measured by the number of people visiting our site on the day, the number of contacts our group made or maybe the number of prospective amateurs to whom we passed radio information? Well it would be all the above but success of the day must be attributed to the following amateurs - Les VK5KLV, Peter VK5KPR, Dennis VK5NTX and Frank VK5KV. Thanks for a great day of playing radio.

DX-News & Views

John Bazley VK4OQ
john.bazley@bigpond.com

Well I start this month with a controversial 'posting' from the PY operators who activated the recent operation from **Mayotte**, TO2FH. PY4BZ, PY2PT and PY2WAS have said that : "*Considering the problems and the costs we have been facing with bureau QSLs, the team supported by PY1NB - Felipe's technology (DX Watch owner) have decided to adopt the QSL Online Request as the only way possible to request a QSL. Direct QSLs or via the bureau will not be accepted. It is a safe way to guarantee that all applicants with confirmed QSOs with TO2FH will certainly receive their QSLs at their homes by mail.*" They plan to update their log, which will be posted to Club Log: *http://qrz.com/db/to2fh*

This policy raises quite a number of issues. I am sure everyone is well aware of the typical costs involved in staging any distant DXpedition, but the stations (as far as I know) were not requested to go to Mayotte , they went of their own accord. In fact Mayotte does not appear in the "Top 100 Most Wanted Countries" listing! A number of sources have pointed out that in spite of the ARRL's LoTW, the demand for actual QSLs is growing! Traditionally it has always been considered the "Last Courtesy" to QSL. I am sure there will be more comment on the policy adopted by the TO2FH operation!

Still on the subject of DXpeditions - The **Central Kiribati** - T31A which, at the time of writing has just closed down. They really have had some bad luck and a lot of difficulties to overcome. The operation originally was planned for 12 days. Then the boat picking them up from Apia (Samoa) was four days late, arriving on April 16 and leaving for T31 on April 18. The journey normally takes four days, on this occasion it took five! The first station was on the air (21 MHz SSB) at 0000 Z April 22. Then the 'boys' on the island posted the following e-mail "*April 24 - Team leaving Wednesday night (April 27), no extra days. LOTS of bad weather last night here and roof collapsed causing equipment damage from rain coming through the roof. All antennas need repair.*" Who said DXpeditioning is fun!

It is good to see that we have another operator heading to **Macquarie Island**: Denis ZL4DB is returning to Macquarie. Unfortunately on his last visit no HF equipment was available in the Shack for him to use. He should arrive on the Island in late April and will join Kevin (VK0KEV). Denis will be there for three months and on SSB only. Please QSL Denis direct to ZL4PW, or via the bureau.

Trinidade Island. This is really good news for VKs! Trinidade is a difficult path from Australia being a Polar Path for everyone. Junior PY2ZA plans to be active from Trinidade Island, (SA – 010) on 160-6 metres CW, SSB, BPSK and RTTY as PP0T for a couple of months. He expects to leave the mainland on 25 April on a Brazilian Navy supply ship, and to reach the island on April 29. Bookmark www.trindade2011.com for further information and updates. QSL direct via EB7DX. Logs will be downloaded to LoTW.

The JX7VPA team heading to **Jan Mayen Island** in July has "launched" their Website at *http://janmayen2011.org/*. Plans are to be QRV from July 6 to 14. The team will be taking a 6 metre vertical and will be donating to the JX7SIX beacon, which will be installed by the next maintenance crew after the JX7VPA operation.

Excellent news from IARU region 1. **Russia** joins CEPT. The Russian State Radio Frequencies Commission decided on 10 March 2011 that the Russian Federation will join CEPT Recommendation T/R 61-01 and ECC Recommendation (05)06 (CEPT Novice), thus making it possible for every CEPT License holder to operate on the territory of the Russian Federation, within a limit of three months, without any additional permission. The call sign to be used shall be RA/Personal Call sign.

QSL **Navassa** 1993. This is excellent for anyone still trying to get Navassa confirmed from the 1993 operation. Jun OE1ZKC (JH4RHF) reports that the original logs for the 1993 DXpedition to Navassa Island have been retrieved from the widow of Vance LePierre (N5VL/W5IJU), the team leader and QSL manager. Should you still need a card for KH2S/KP1, KH2W/KP1, KH2Y/KP1, NF6S/KP1 or W5IJU/KP1, you can send your request to Jun Tanaka, P.O. Box 1200, 1400 Wien, Austria. "*I will try to put all of log data into electric format*", Jun says, "and upload to LoTW". He can be contacted at *jh4rhf @ arrl.net*

I wonder how long it will be before the team that gave us Desecheo will manage an operation from Navassa Island? I see from the last survey that it now ranks #2.

As a reminder the VK2IR group has cancelled their DXpedition to Rotuma Island and is instead heading to **Lord Howe Island** as VK9HR from July 8 to 17. They have a website at *www.lordhowe2011.com*. YT1AD's Conway Reef team is heading to Rotuma as 3D2R in the July-August time frame and has supposedly pushed back their Conway Reef DXpedition to 2012. Eddie DeYoung VK4AN has "deferred" his trip to Rotuma to 2013, which will be the 25th anniversary of the first 3D2/R DXpedition. The Pacific DXers group *http://pacific-dxers.com/*, led by Bill Horner VK4FW is still planning to go to **Nauru** as C21A in the November-December of this year time frame. Rumour has it that a Polish team is also planning a C21 DXpedition in early 2012.

Chris ZS6RI is active as 9J2RI from **Zambia** for a year or two on a "*6-week on/6-week off*" work schedule. According to his QRZ.com entry, direct cards should be sent to Chris J. de Beer, Box 333, Bethlehem, GA 30620, USA. He will upload his log to LoTW at least once every 6-week rotation, and probably even weekly. Bureau cards will be sent once a year.

Phil F4EGS will be active again as TT8PK from N'djamena, **Chad** between 15 April and 15 June. He will be QRV in his spare time. Last year he operated mainly CW on 80-10 metres. QSL via F4EGS, direct or via the bureau.

Tim KD5SSF will spend a couple of years in Ukarumpa, **Papua New Guinea**, and will be active as P29ZL. He will operate PSK31 and SSB in his evenings and during the weekends, using 100 watts.

DXCC NEWS: The following operations have been approved for DXCC credit: ZD9AH Tristan Da Cunha & Gough 2010 operation

ZD9T Tristan Da Cunha & Gough 2010-2011 operation

If you had these operations rejected in a recent application send a note to dxcc@arrl.org to have your record updated.

A final comment from Pierre Tromp ZS8M. He said, though his dipole "worked extremely well," the antenna restriction made it so he could not work everyone. Other limitations were "weak propagation conditions and restricted operating hours." Nearby construction made it impossible to test his SteppIR vertical. Severe RFI also was a problem, from the new base. Asked if he will return, he is not sure, but will be keeping the callsign just in case. He would like to go to Gough Island, ZD9, especially if his XYL can go along for a year there. Pierre says it has been a fantastic year and he has made lifelong friends on his team there, plus fantastic friends in the DX community. 8,500 QSOs were made. Pierre says it was also a difficult year, being away from family. The supply ship arrived on April 11 last with two amateurs on board, but they are not active operators.

Good luck in the pile-ups!

Special thanks to the authors of *The Daily DX (W3UR), 425 DX News (I1JQJ)* and *QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of The Daily DX from *www.dailydx.com/trial.htm*

VK6news

John Ferrington VK6HZ

HARG John Moyle Field Day station.

Welcome to another month of VK6 Notes! And what a month it has been! WOW! Here in Perth we finally had some rain. It was long overdue too. Here is what has been going on in VK6 for the last month.

At **NCRG** (*www.ncrg.org.au*) we have had a change in our committee. Richard Beck, VK6BEC is now the President. Gerhard Mueller-Dorn, VK6GMD was elected Secretary, and Anthony Lumley, VK6AL has remained as Treasurer. Well done fellas, we look forward to your leadership for our great club!

What has been going on at HARG? Here is the report from Bill Rose VK6WJ.

March and April have been very busy months for the **Hills Amateur Radio Group**. We have participated in John Moyle Field Day, put on our annual HARGFEST and set up for National Field Day. On 7 May we will have conducted a demonstration of amateur radio at the Pickering Brook Show.

For the John Moyle Field Day we set up at Mount Gunjin and once again braved the rutted goat track to the top of the mountain which is about 300 metres above sea level. For power we had solar panels and large 12 volt batteries plus an RF quiet generator. Antennas consisted of a well guyed telescopic mast carrying a rotatable dipole for 10, 15 and 20 metres plus a G5RV for 40 and 80. Comfort was provided by Allan's marquee and Rob's tables plus the trusty HARG barbecue. In total about 10 to 15 amateurs visited or operated during the day. This year we did not stay overnight. Conditions on HF were quite good but late in the day we started to run out of operators so we packed up about 19.30 with just enough light to see the potholes on the way down.

HARGFEST was very successful, with all 18 tables booked. We were pleased to welcome John from Tower Communications, Mark from TET-Emtron and Heath and Monique from SpoOkTech Engineering. As well as the commercial tables there were many amateurs with interesting and useful bits and pieces ranging from 50 cents each for high power terminals to $5 for wide spaced variable capacitors and hundreds of dollars for radios and test equipment. The sausage sizzle and drinks went down well and the weather was kind to us – not too hot. We obviously made the right decision to move from February to April. The door prize of a Wouxun Handheld, donated by Heath of SpoOkTech, was won by Gary VK2BL, the IC-718 by Barry VK6WF, the FT-1802 by Karen Wellstead

HARGFEST.

The HARG group at the National Field Day 2011.

from Albany and the 40/80 m dipole by Neil VK6FSKB. These last three prizes were donated by Ian VK6LCT of Timberden Plant Hire.

For National Field Day, HARG set up at Stirk Park in Kalamunda. In total, 23 amateurs attended - many from HARG plus representatives from the Scouts, Ham College and WIA.

We also had a number of local amateurs visit the site as a result of reading our press release in the local papers. Some of these had dropped out of amateur radio over the last few decades but were interested in re-activating their stations and have taken home copies of the HARG application form. A common question was "Is anything happening in amateur radio these days or has it been killed by the Internet". We had two radio systems set up in a marquee plus SDR with computer display. Power was supplied by two large deep cycle 12 volt batteries topped up by four solar panels. An IC-7400 feeding into a G5RV made quite a few overseas contacts on 20 m. We were also pleased to have a QSO on 40 m to a Foundation call who was making his very first on-air contact. An FT 7800 with 2 m/70 cm vertical provided a number of VHF/UHF contacts. One of our newest members, who had recently received his F call, set up his very first HF station, consisting of an FT-857 into a 10 m high Squid Pole plus radials. One table was filled with WIA brochures plus Club membership forms and ARRL books. We also had a number of static displays including a working Morse practice set and several crystal sets.

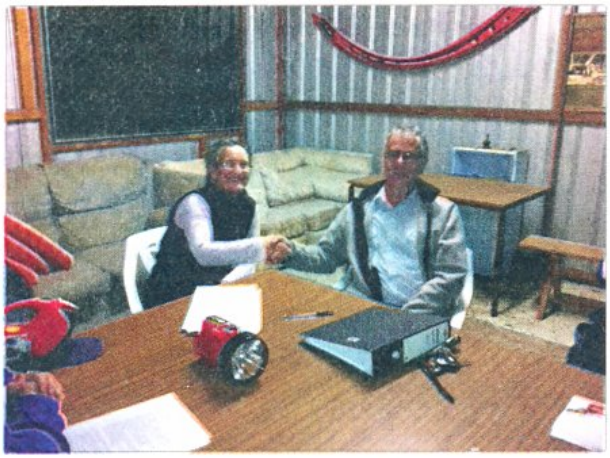
Well that just about wraps up another month in VK6. We look forward to your company next month!

73 es gd dx

de John VK6HZ

Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY



Sealing the deal with the Guides in the shed to be used: Suzy Baldry and David Clegg VK5KC.

The April meeting was the members only buy and sell. Not quite as many people there as it was the Thursday before Easter, but those that were there thoroughly enjoyed exchanging their own 'junk' for someone else's 'junk'. Don't we all?

The May meeting will be a talk on "Amateur Seismology" by John Harris VK5EV.

The June meeting will be a talk titled "Similarities between the human cardiovascular system and radio transmission." An interesting and thought provoking talk by Andrew Russell VK5CV.

Sunday 3 July will be the club mid year lunch to be held at the "Fresh Choice Restaurant" in Oaklands Park.

November 20 will be the Club annual Hamfest at the Goodwood Community Centre, time to start thinking of booking a table. Several commercial vendors have already booked a place.

The Club meets at the Belair Community Centre, corner of Sheoak Rd and Burnell Drive, Belair. Meetings commence at 7.30 pm on the third Thursday of each month. Check the Club website *www.ahars.com.au*

On Monday 2 May, Club President David Clegg signed an agreement with the Blackwood Guide troop for the use of a shed on their premises.

The shed is a 6 m by 8 m garage; it will be insulated and lined at AHARS expense. We have an initial tenure of three years with extensions after that. Once renovated it is expected to be used for a club station, projects, and as a training venue. Use will be confined to Wednesday and Thursday nights and all day on Saturday. Full weekend access is available by arrangement when a course is to be run. The Guide Group have first right of use at all time, should they need it for special activities. Several members have already promised donations to the project. This promises to be an exciting time in the Club's history.

If you happen to be visiting Adelaide any third Thursday do contact the President, David VK5KC (*vk5kc@wia.org.au*) or the Secretary Sue VK5AYL, (*vk5ayl@wia.org.au*)

Visitors from other clubs are also always welcome.

AMSAT

David Giles VK5DG
vk5dg@amsat.org

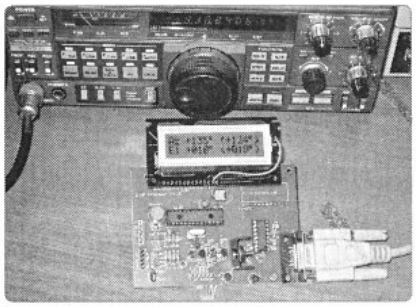


Figure 1: The LVB board during testing.

Viva Las Vegas

Something from my own bench this month. Also results of ARISSat-1's event in April.

The Las Vegas Boulevard Tracker

While holidaying in Las Vegas, Howard Long G6LVB came up with the idea for a new interface unit to go between a PC and antenna rotators. The aim was for a reasonably priced unit that was simple to construct and communicates with the PC via USB or RS-232 using a common protocol. Bare PCBs and fully assembled units have been produced by AMSAT-UK and AMSAT-NA. This month I present how my version came about.

A new tracker?

The story starts some months ago when I bought a LVB tracker PCB from AMSAT-NA. I have been using a Fodtrack interface to control the antenna rotators and have found it to be a simple, reliable system. However it has its drawbacks. When powered up it tends to move the rotators to some random setting (usually maximum azimuth and elevation). My rotator pots are worn and have a few 'flat spots' that the Fodtrack interface tends to make worse by 'hunting' and lots of relay chatter. Fodtrack's other main drawback is that it is a unidirectional system; there is no feedback signal to the PC. It was time for another station upgrade. The LVB tracker had the most appeal for me as it had a USB interface so my laptop could drive it, a common protocol to all the tracking software I use from time to time and an LCD display option as my azimuth rotator's readout motor had died some time ago. But as so often happens, I will get the project to the 80-90% completed stage, lose interest and get distracted by some other new project.

A new computer

My place of employment was having a big chuck-out of office equipment. You get a mixture of feelings when you see a large skip full of PCs, printers and monitors. "What a waste." "What is worth salvaging?" "What will the wife say?" Having just been through the process of building a new shack and tossing out plenty of pre-loved equipment along the way I was able to resist much of the temptation to fill it up again. When I got home that night and told my XYL about the clean-up, she immediately asked, 'How many computers did you bring?'. The answer was ' just one'. I picked out the cleanest looking unit with a small case - a Compaq Evo D510. To my surprise it was a good choice. For a PC nearly 10 years old it had had very little use. There was only a small amount of dust, the fans were clean and ran quietly and the hard drive had survived being thrown in the bin. The only faulty part was the CD-ROM drive that did not read disks. Good thing I did not throw out that spare one during the shack clean-up. The important specs are a 1.8GHz Pentium 4, 512 Mb of RAM, two serial ports, one printer port, four USB ports and sound card with line-in and line-out: ideal as an amateur radio PC. As a bonus it runs quieter and uses less power than the main PC. Off to the computer market to pick up a wireless network card and a Keyboard/Video/Mouse switch and that is all the money spent on it.

After spending the time in checking the hard drive and getting all the wanted software loaded on and configured, it was time to figure how best to use the various ports. I also moved a two port serial card from the main computer to the new one. So the inspiration was given to finally finish my LVB tracker as I was using the parallel printer port for my EPROM programmer and had a serial port left over.

The LVB board

The LVB tracker goes between a PC and the azimuth and elevation rotator controller(s). The PCB has provision for a normal RS-232 serial port or an on-board USB to RS-232 converter module. The user interface consists of a two line LCD and four pushbuttons for manual control. All of these are optional, though the LCD is useful during calibration.

Figure 1 shows the LVB board during testing before being put in its box (it was tracking CO-55 at the time). The RS-232 connection is on the right hand side, the ribbon cable at the bottom goes to the rotators. The LCD module plugs into the header strip. The board can use 14 or 16 pin LCD modules (the extra two pins supply the LCD back lighting). My LCD module is from an old dot-matrix printer. It is a 14 pin module with the two wires feeding the back light off the LCD's 5 volt supply. The whole unit draws about 150 mA, so a heatsink on the 7805 regulator is needed. Most of the power goes to the LCD and its back lighting. Unplug the LCD and the bare board only uses 25 mA. The header strip on the left is for the optional front panel pushbuttons and the missing chip in the top right corner is for the USB-RS-232 module.

My build

The LVB tracker can be purchased as a bare board, a populated board (no LCD or case) or the full package fully assembled in a case with cables. I had chosen just the bare board as I had many of the components already, enjoy building things and it was the most cost effective (i.e. cheap). The software, schematics,

instructions are freely available off the Internet [1, 2]. The 105 x 80 mm double sided PCB is silk screened and plated through but does not have a large ground plane, so I put it into a metal box to keep down any interference.

The other main component I had to purchase was the PIC16F876 microcontroller. Either a '876 or '876A is suitable and as it runs at 4 MHz any version can be used. The software also contains a program to install the firmware into the chip using the serial port, so a special programmer is not required. The only problem I had during construction was programming the PIC. I tracked it down to a faulty reset switch that had bad contacts. Once replaced all went according to the instructions.

I do not own one of the YAESU AzEl rotators for which the board is designed but use an old Daiwa rotator for azimuth and a KR-500 for elevation. Years ago I modified my rotator control boxes with relays and voltage outputs so all I needed to do was tweak the pot voltage ranges from 0 to 4.5 V. Calibration was done as per instructions and went smoothly.

In operation

The display shows the rotator azimuth and elevation on the right side and the desired azimuth and elevation from the PC on the left. No rotators are moved until it gets a message from the PC. The rotator pot flat spots do not seem to worry it either. I have used it with SatPC32, Orbitron via WispDDE and Nova, all work fine. It just works.

ARISSat-1 special event

Sadly it was not as special as it could have been. The 50th anniversary of Gagarin's historic first manned spaceflight went without a signal heard from ARISSat-1. Battery problems have been blamed for the failure. Despite having a charger on board the ISS, the crew did not give the battery a charge before the event. The special silver-zinc battery as used in their spacesuits is rated for only 5 full charge / discharge cycles. The main worry now is that the battery may not work when ARISSat-1 is deployed in July. ARISSat-1 has been designed to work with or without a functioning battery during its lifetime except during the first 15 minutes after it has been tossed out of the ISS when it will be running off the battery. Still it generated a fair amount of interest with many non-reports appearing on the AMSAT mailing lists.

Final Pass

So far I am pleased with the LVB tracker. Unlike the Fodtrack interface, I have not had to worry about it moving the rotators right to their ends and possibly damaging them. It is a pity ARISSat-1 did not work in April, but let us hope the battery will be fully charged and it will be operational from next month.

References

[1] The LVB tracker home site: *http://sites.google.com/site/wa4sxm/home*

[2] Howard Long's site: *http://www.g6lvb.com/Articles/LVBTracker/index.htm*

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email *coordinator@amsat-vk.org*

Group Moderator
Judy Williams VK2TJU
email *secretary@amsat-vk.org*

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.
AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net
Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania
VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.
Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

Contests

Phil Smeaton VK4BAA

Contest Calendar for June 2011 – August 2011

June	4/5	IARU Region 1 Field Day	CW
	11	Asia / Pacific Sprint	SSB
	18/19	**Winter VHF/UHF Field Day**	**All**
	18/19	All Asia DX	CW
	25/26	King of Spain Contest	SSB
	25/26	Marconi Memorial Contest	CW
	25/26	ARRL Field Day	All
July	9/10	IARU HF World Championship	CW/SSB
	16/17	CQ Worldwide VHF Contest	All
	30/31	RSGB IOTA Contest	CW/SSB
August	6	TARA Grid Dip	PSK/RTTY
	7	Waitakere (NZART) Sprint	CW
	6/7	10-10 International QSO Party	SSB
	13/14	Worked All Europe	CW
	13/14	**Remembrance Day Contest**	**CW/SSB/FM**
	27/28	**ALARA Contest**	**CW/SSB**

Note: Always check contest dates prior to the contest as they are often subject to change.

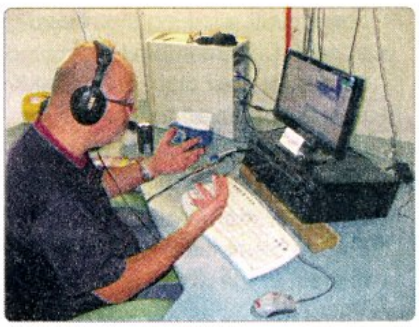


Photo 1: Mike VK4DX trying to encourage a station to become a much needed multiplier for the log.

Welcome to this month's Contest Column.

CQWPX SSB 2011 - Revisited

This contest was great fun to play radio in. The bands came to the party (even 10 m!) and continental records around the world began to tumble as a result.

An improved sunspot count meant that band occupancy was high. Operators seemed to be generally sensible in their approach this year as regards band occupancy. With propagation changing swiftly it is easy to ask if a frequency is in use, get no reply, then get berated 10 minutes later as someone in Europe was actually calling CQ on it and had been doing so for an hour or more. Most went for the easy option and shuffled frequency a bit to get out of their way as not doing so would lose QSO rate usually, but some operators were rude enough to start CQing on a frequency without listening beforehand and got the rough edge of the occupant thereof!

The VK4KW team was expanded by two for WPX, welcoming Laurie VK7ZE and Mike VK4DX for the weekend to come and play radio. Photo 1 shows Mike VK4DX trying to encourage a station to become a much needed multiplier for the log. If only this approach actually worked, but much to Mike's chagrin it did not bear any fruit....

VK1CC generated some traffic on the bands and had some fun in the M/M section – but they almost did not make it! Member/s of the group could not attend at the last minute, so this initially left some holes in the equipment provision. With Murphy paying yet another call to the hardware of the gear that got to the shack, the lads soldiered on with 100 W to amass just over 1000 Qs for 1.8 million points. An excellent job!

Steve VK3TDX reported 10 m to be in good shape, with a nice run to EU on the Sunday night. Steve bagged 1085 Qs for a claimed score of 2 million points. Nicely done Steve!

Andrew VK4NM un-wrapped his shiny new callsign (well, new to Andy anyway!) and set about the contest with gusto, gaining a claimed score of a fraction under 6.6 million in the process for his M/S entry. I cannot help but wonder if VK4HAM appears in anyone's log for the contest, as Andy has been CQing with his old call for years so he might have slipped up during the midnight shift!

Steve VK6IR entered as single band 15 m, with 1300 Qs for a claimed score of almost 2.5 million points – a superb effort that may well have netted Steve the Oceania record for the category.

The following VKs submitted a log for the contest – but unfortunately no claimed scores available at the time of writing. Please see table on next page.

Team Contesting

Contesters have been allowed by the contest organizers to submit contest scores made attributable to our clubs/groups for several years now, but maybe it is time for a change. This rule was originally written back in the late 1940s when these competitions started and the wording took into account the situation of the US based Clubs. There are countries outside USA and Europe where the territory is vast (VK is a prime example) and the ham population is very little. The contests are world wide events however, so maybe the situation of other regions than those

seemingly currently catered for need to be considered. But, parts of the USA are also huge rural areas, so the current 275 km radius limit might not work for all of the USA either.

There are several options, including:

- Remove the geographic limitation completely, allowing members of each Club to submit their scores for their club, no matter if they have moved temporarily or permanently;
- Keep this geographic limitation as it is for the US and Western Europe countries and remove it for the rest of the world; and so on.

But some people do not feel that two people over 1000 km apart can be in the same club, as a club is a group of people that meet periodically. Australia's VKCC covers a huge geographic area however – other countries will also fit this 'club' description. But if the team competitions stimulate more activity in the contests, why would there be resistance to extend or modify the geographical area?

Perhaps it would be worth considering redefining how club competitions are scored.

Clubs might possibly be defined by their members in any way they like. Aspects such as geography, favourite contest, radio interests, date when first licensed - whatever they choose. Maybe a contest could impose some fairly loose constraints, e.g. being all in the same country.

Clubs could field one or more teams, with each team's composition well defined by the rules for a particular contest. In other competitive arenas, a team has a limited number of players – it would be unthinkable that an AFL team might have dozens of players on the field concurrently. So, for example, in a given contest a team might be defined as five operators - who could be either at a FD location or at their home stations. Perhaps a team might be required to have at least one LP and one QRP member, or even at least one rookie. Having a limitation on the number of operators within a given team might serve well to reduce the likelihood of vast teams forming and dominating the results table, as has often been the case in the past. Because teams are of limited size, almost any group calling itself a club could field a team. Some clubs might be able to field a lot of teams. Team scores are computed by adding up the scores of the team members. Clubs in densely populated areas may be considered to still have an advantage with more potential team members available of course, but a

Callsign	Operator	Transmitter	Band	Power	Assisted	Overlay
VK1CC	Multi-op	Unlimited	All	High	Assisted	
VK1MAT	Single-op	One	20m	Low	Non-assisted	Rookie
VK1MJ	Single-op	One	All	High	Non-assisted	
VK1OO	Single-op	One	All	Low	Assisted	
VK1PAR	Single-op	One	All	Low	Non-assisted	
VK2ACC	Single-op	One	All	High	Non-assisted	
VK2BCQ	Single-op	One	All	High	Non-assisted	Tb-wires
VK2CA	Single-op	One	All	High	Assisted	Tb-wires
VK2ERP	Single-op	One	All	High	Non-assisted	
VK2FHRK	Single-op	One	All	Qrp	Non-assisted	
VK2HBG	Single-op	One	All	Low	Non-assisted	
VK2HEK	Single-op	One	All	Low	Assisted	Tb-wires
VK2IM	Single-op	One	All	High	Non-assisted	
VK2WAY	Single-op	One	All	Low	Non-assisted	Tb-wires
VK2WTT	Single-op	One	20m	Low	Non-assisted	
VK3AVV	Single-op	One	All	High	Non-assisted	
VK3DOG	Single-op	One	All	High	Non-assisted	Rookie
VK3LM	Single-op	One	All	Low	Non-assisted	
VK3MDX	Single-op	One	All	Low	Non-assisted	
VK3TDX	Single-op	One	All	High	Non-assisted	
VK3VTH	Single-op	One	20m	Low	Non-assisted	Rookie
VK4ATH	Single-op	One	All	Qrp	Non-assisted	
VK4BL	Single-op	One	All	Low	Non-assisted	Tb-wires
VK4DMP	Single-op	One	20m	Low	Non-assisted	
VK4EMM	Single-op	One	All	High	Non-assisted	
VK4FJ	Single-op	One	15m	Low	Non-assisted	
VK4FJAM	Single-op	One	All	Qrp	Non-assisted	
VK4IU	Single-op	One	All	High	Non-assisted	
VK4KW	Multi-op	Two	All	High	Assisted	
VK4MN	Single-op	One	20m	Low	Non-assisted	Tb-wires
VK4NM	Multi-op	One	All	High	Assisted	
VK4QH	Single-op	One	All	Low	Non-assisted	
VK4VDX	Single-op	One	All	Low	Non-assisted	
VK4WIP	Multi-op	One	All	High	Assisted	
VK4XES	Single-op	One	All	Low	Non-assisted	Tb-wires
VK5FCJM	Single-op	One	15m	Low	Non-assisted	
VK5FMPJ	Single-op	One	40m	Low	Non-assisted	Rookie
VK5MK	Single-op	One	All	Low	Non-assisted	
VK6FDX	Single-op	One	All	High	Non-assisted	
VK6FMAB	Single-op	One	All	Low	Non-assisted	
VK6HAD	Single-op	One	All	Low	Non-assisted	
VK6IR	Single-op	One	15m	High	Assisted	Tb-wires
VK6NC	Multi-op	One	All	High	Assisted	
VK6WX	Checklog	One	All	High	Non-assisted	
VK7NET	Single-op	One	All	Low	Non-assisted	
VK7XX	Checklog				Assisted	
VK9CF	Single-op	One	All	Low	Non-assisted	Tb-wires

Listing of VK stations who submitted logs for the CQWPX SSB 2011 contest.

10-member club in a rural area might be able to field only two teams but if they are excellent operators those teams might end up at the top of the results table. An alternative might be that instead of defining a team as a fixed number of operators perhaps define a team as a fixed number of operating hours. If a contest allows Single Operator entrants to operate for a maximum of 30 hours, then the definition of a team might be expressed as a max of 150 hours of operating time. A team could be five operators working all 30 hours, or 10 operators working only 15 hours, or any other combination. There would be considerable strategy involved for a club in forming a team and setting a schedule of hours and bands. With intra-team coordination the strategy could also become tactical as decisions are made during the contest in response to propagation etc. With teams defined by hours instead of headcount, the endurance skill of being able to sit in a chair and stay awake for days becomes less of a factor.

It certainly seems a tad strange to me under the present rules that travelling amateurs to, say, the Caribbean or Africa from their home country, are permitted to allocate their scores to their home club when at the same time guys who have been a member of a club for many years become ineligible if they move out of the stated radius.

The CQMM DX Contest in later April had a Club definition category starting this year, so it will be interesting to see how this pans out in the results. What is important though in this call for change is not to impose additional burden on the Contest Committees, as they have more than enough to do without the necessity to check membership and prove boundaries – which is probably the reason why there has been little dialogue from the Contest Committees about this issue previously.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via *vk4baa@wia.org.au* See you on the bands.

73 de VK4BAA

Harry Angel Memorial Sprint 2011

Ian Godsil VK3JS Contest Manager

2011 May 21st Saturday 1000 Z – 1146 Z

Greetings All.

The rules for the Harry Angel Sprint 2011 are below and I hope that you will all join in.

I apologise for being so late with the announcement of this event this year. So far it has been a very busy year with lots of unexpected things happening. I meant to organise myself in January, but now it is a third of the way through the year and things are still not done.

Sadly this brings me to the conclusion that it is time to relinquish my management of this event. Is there someone out there who would be prepared to take over the management? If so, I would be very happy to hear from you. My email address is: *vk3js@zoho.com* or phone 0466 286 003.

Thanks for all your past support and I look forward to receiving logs from you later this month.

73, Ian Godsil VK3JS

This year marks the 13th Anniversary of an annual Contest to remember VK's oldest licensed operator, Harry Angel. Please note the time length of the Contest - 106 minutes, Harry's age when he died in 1998. It is open to all HF operators.

Object is to make as many contacts as possible on band 80 metres, using modes CW and SSB.

Category: Single Operator

Sections: CW, Phone, Mixed (please choose ONE ONLY).

Frequencies: CW: 3500 - 3535 kHz, Phone: 3550-3590 kHz; 3650-3665 kHz

Exchange RS(T) and serial number starting at 001.

Score two points per CW QSO and one point per Phone QSO.

Stations may be worked once only per mode. Logs must show time UTC, callsign worked, mode, RS(T), serial numbers sent and received for each QSO.

Sending Logs: Email is the preferred method to *vk3js@zoho.com* (Please note that even for email logs, the entrant's name, callsign and postal address are required, as per the Summary Sheet.)

Send written Logs to Harry Angel Sprint, 121 Railway Parade, Seaford 3198, by 2011 May 30th Monday.

Send summary sheet showing name and date of Contest, name, address and callsign of entrant, category entered, points claimed and a declaration that the rules and spirit of the Contest were observed.

Notes

1. Please submit your logs as soon as possible after the Contest and do not forget to include your postal address (you cannot know if you may be a section winner!!).
2. The VKCL logging program covers this contest. This way everything can be kept electronic.

John Moyle Field Day 2011 Results

Denis Johnstone VK4AE/VK3ZUX
Contest Manager

24 Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Place /Award
VK3JNH	Multi	Phone	All	277	2542	1 /*
VK3CNE	Multi	Phone	All	567	2311	2 /*
VK2WG	Multi	Phone	All	297	1850	3 /*
VK2HZ	Multi	Phone	All	485	1655	4 /*
VK3YVG	Multi	Phone	All	382	1351	5 /*
VK2BPK	Multi	Phone	All	163	1295	6 /*
VK3ANR	Multi	Phone	All	412	1096	7 /*
VK6ARG	Multi	Phone	All	291	769	8 /*
VK6KTV	Multi	Phone	All	169	417	9 /*
VK7WCN	Multi	Phone	All	172	344	10 /*
VK6AHR	Multi	Phone	All	154	306	11 /*
VK8DA	Multi	Phone	All	128	256	12 /*
VK8BP	Multi	Phone	All	120	240	13 /*
VK3UHF	Multi	Phone	VHF	299	3015	1 /*
VK2EH	Multi	Phone	VHF	85	1730	2 /*
VK4WIS	Multi	Phone	VHF	199	995	3 /*
VK4WIE	Multi	Phone	VHF	114	766	4 /*
VK2SRC	Multi	All	All	1043	9094	1 /*/**
VK3ER	Multi	All	All	735	6062	2 /*
VK4IZ	Multi	All	HF	820	1791	1 /*
VK2AWA	Multi	All	HF	800	1684	2 /*
VK4CHB	Multi	All	HF	224	460	3 /*
VK6LS	Multi	All	HF	226	452	4 /*
VK5LZ	Multi	Phone	HF	802	1604	1 /*
VK2AWX	Multi	Phone	HF	651	1302	2 /*
VK3FRC	Multi	Phone	HF	522	1044	3 /*
VK4WAT	Multi	Phone	HF	406	812	4 /*
VK5BAR	Multi	Phone	HF	399	798	5 /*
VK2AOJ	Multi	Phone	HF	347	694	6 /*
VK6SH	Multi	Phone	HF	279	558	7 /*
VK1MAT	Multi	Phone	HF	155	310	8 /*
VK4WIT	Multi	Phone	HF	148	296	9 /*

Six Hour Portable Operation – Multiple Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Place /Award
VK3AWS	Multi	Phone	All	269	832	1 /*
VK5GRC	Multi	Phone	All	50	109	2 /*
VK4BAR	Multi	Phone	All	54	108	3 /*
VK1HW	Multi	Phone	HF	189	378	1 /*
VK2SF	Multi	Phone	HF	135	270	2 /*
VK7DIK	Multi	Phone	HF	68	136	3 /*
VK2BOR	Multi	Phone	HF	54	108	4 /*
VK8AR	Multi	Phone	HF	51	102	5 /*
ZL3UR	Multi	Phone	HF	45	90	6 /*
VK4WIL	Multi	All	HF	41	84	1 /*
VK5SR	Multi	Phone	VHF	57	1378	1 /*
VK5OM	Multi	Phone	VHF	4	80	2 /*

24 Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK5KBJ	Single	Phone	All	131	571	1 /*
VK2ZTY	Single	Phone	All	31	296	2 /*
VK5CV	Single	Phone	All	54	255	3 /*
VK5FPAW	Single	Phone	All	14	49	4 /*
VK3VCL	Single	Phone	VHF	237	1285	1 /*
VK5FANA	Single	Phone	VHF	151	1171	2 /*
VK2IO	Single	Phone	VHF	46	572	3 /*
VK2JDS	Single	Phone	VHF	30	280	4 /*
VK4HF	Single	Phone	HF	614	1198	1 /*
VK4GH	Single	Phone	HF	529	1060	2 /*
VK2HBG	Single	Phone	HF	517	1034	3 /*
VK2ACH	Single	Phone	HF	164	328	4 /*
VK6YD	Single	Phone	HF	124	248	5 /*
VK6ZRW	Single	Phone	HF	111	222	6 /*
VK4NH	Single	Phone	HF	96	192	7 /*
VK3VGK	Single	Phone	HF	53	106	8 /*
VK5AR	Single	Phone	HF	30	60	9 /*
VK3MV	Single	All	HF	182	410	1 /*
VK4EV	Single	All	HF	71	154	2 /*
VK1WJ	Single	All	All	64	128	1 /*

Comments on John Moyle Field Day 2011

This year's entries came from every Australian mainland call area, as well as from Tasmania and New Zealand. The total number of logs submitted was 129. This was an increase from the 122 logs received last year. It was good to see several ZL stations take part this year, and three stations submitted their log. Well done to all who took part.

I have included all of the results that I received in the totals and if any are missing, they are completely lost. I can only offer my apologies to anyone so affected. I am sorry if your log is missing, but it did not get to me despite my most careful procedures and cross checking.

Based upon submitted logs, there were some 20,540 contacts, amounting to some 70,411 points claimed, a 12.9% decrease from 2010. This was pretty heavy contesting, but unfortunately it resulted in just 129 logs being submitted.

Six Hour Portable Operation – Single Operator

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK3VFO	Single	Phone	VHF	34	561	1 /*
VK3FIX	Single	Phone	VHF	29	312	2 /*
VK1PE	Single	Phone	VHF	38	310	3 /*
VK3VMC	Single	Phone	VHF	30	248	4 /*
VK5ZD	Single	Phone	VHF	25	202	5 /*
VK5KDL	Single	Phone	VHF	13	130	6 /*
VK3FOAB	Single	Phone	VHF	7	36	7 /*
VK5RX	Single	Phone	All	120	844	1 /*
VK4OE	Single	Phone	All	80	308	2 /*
VK5ZT	Single	Phone	All	41	195	3./*
VK3EVL	Single	Phone	All	9	88	4 /*
VK3FEGL	Single	Phone	All	9	88	5 /*
VK3HJA	Single	Phone	HF	127	254	1 /*
VK3VTH	Single	Phone	HF	112	224	2 /*
ZL2AYZ	Single	Phone	HF	90	180	3 /*
VK3ZPF	Single	Phone	HF	77	154	4 /*
VK3YE	Single	Phone	HF	60	120	5 /*
VK3AFW	Single	Phone	HF	53	104	6 /*
VK4FHYH	Single	Phone	HF	44	88	7 /*

/ Certificate Awarded*
*/** President's Cup*
/ Participation Certificate*

Home Station – 6 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK2KDP	Home	0	0	196	305	1 /*
VK2DAG	Home	0	0	192	290	2 /*
VK5KV	Home	0	0	150	228	3 /*
VK2AFY	Home	0	0	151	215	4
VK2EI	Home	0	0	67	113	5
VK5ALX	Home	0	0	55	99	6
VK3FBCG	Home	0	0	44	82	7 /$
VK3CVF	Home	0	0	45	72	8
VK4DGU	Home	0	0	38	71	9
VK4PJC	Home	0	0	37	69	10
VK6WJ	Home	0	0	37	65	11
VK3KTM	Home	0	0	28	44	12
VK7FEET	Home	0	0	20	36	13
VK4KML	Home	0	0	22	35	14
VK3ADB	Home	0	0	20	34	15
VK3ZHQ	Home	0	0	17	32	16
VK5PX	Home	0	0	16	29	17
VK4ATH	Home	0	0	14	27	19
VK2XPT	Home	0	0	15	23	18
VK5KPR	Home	0	0	11	18	20
VK4PQ	Home	0	0	7	12	21

Unfortunately, the numbers of stations who went to the considerable trouble of going out and setting up as a portable station and then not bothering to submit a log as an entry, is still a disappointment. Some multiple operator stations got very big scores and perhaps it simply reflects the great and varied planning and implementation efforts required to assemble and operate a multi operator station.

Home Station – 24 Hour

Call Sign	Operators	Mode	Band	Contacts	Score	Award
VK7NET	Home	0	0	502	708	1 /*
VK4VDX	Home	0	0	410	655	2 /*
VK3FSTU	Home	0	0	244	418	3 /*
VK4MIT	Home	0	0	253	376	4 /*
VK5FPAS	Home	0	0	182	305	5 /*
VK2DF	Home	0	0	122	209	6
VK5FMPJ	Home	0	0	108	183	7 /$
VK4MON	Home	0	0	81	142	8
ZL2AKM	Home	0	0	75	135	9
VK3GK	Home	0	0	79	129	10
VK3AKT	Home	0	0	65	112	11
VK5NE	Home	0	0	58	111	12
VK2RZ	Home	0	0	61	108	13
VK3LDR	Home	0	0	47	86	14
VK2UH	Home	0	0	40	69	15
VK5FMJF	Home	0	0	44	65	16 /$
VK3JDA	Home	0	0	36	62	17
VK2KTT	Home	0	0	29	47	18
VK6HX	Home	0	0	25	46	19
VK4FJAM	Home	0	0	27	43	20 /$
VK5MK	Home	0	0	20	32	21
VK2AWJ	Home	0	0	14	25	22
VK3FCAA	Home	0	0	14	25	23 /$
VK3HGB	Home	0	0	12	19	24
VK5RG	Home	0	0	3	6	25

/ Certificate Awarded*
*/** President's Cup*
/$ Participation Certificate

Activity was carried out on all bands permitted under the rules. There was not a noticeably increased activity on HF, and the frequencies in use followed the low sunspot cycle. This sunspot cycle is only just after the bottom of the cycle and conditions did not appear to improve substantially this year.

In the higher UHF and Microwave bands there was an increase in activity, but not yet back to the peak in 2008. Maybe it follows a weather cycle, rather than the solar cycle?

The scoring in the UHF range was around the same as for last year. In the VHF range the number of contacts is about the same as for 2010. The absence of the larger VK2 & VK4 club stations, because of the miserable weather certainly reduced activity, with a number of stations making such comments.

The other major change noticed this year was the increase in Portable Station operation, and a decrease in Home Station operation. Clearly there were some portable station operators who did not bother to submit a log and are again strongly encouraged to do so next year.

The participation across the various Call Areas was patchy. There was a reduction in the number of Portable stations in VK2 and an increase in Portable stations in the other states as more Portable stations ventured into the field to take advantage of the kinder weather?

All of the portable stations that went to the effort to send in a log get a certificate. The WIA believes that

people who made the effort to set up a portable station and operate should be acknowledged. In line with last year, the Foundation License logs who did not achieve a placing were instead awarded a Participation Certificate for encouragement.

A pleasing increase to thirteen Foundation licensed operators submitted a log (none from VK2, five were from VK3, two were from VK4, five from VK5 and one from VK7). There were many more stations than this logged during the contest. All logs submitted by foundation operators were awarded a certificate. Logs from club station showed that quite a number took part, as part of the club station efforts.

Editor's Note: Denis has provided a very detailed analysis of results from 2011, including comparisons with previous years and between the various contest categories. The analysis points out that there can be NO single winner of the Contest, only winners in each contest category/ section, as the rules are effectively different for each category. It should be noted that all stations submitting an entry are required to comply with the Rules of the contest in ALL respects. It is disappointing to see that one Club station was extremely reluctant to meet the requirements of the Rules, even after several requests to do so by the Contest Manager – they are extremely fortunate that their entry was not simply disregarded. Such behaviour in the future will not be tolerated and non-compliant entries will be simply excluded from the results. Denis has also proposed a new system of scoring for the 2012 event. All can read the detailed report on the WIA website at: *http://www.wia.org.au/members/contests/johnmoyle/*

The Future

Now it is over to you. There are always ways to improve anything, but scrapping something because it does not suit you is not possible, but if benefits are shown to be available, further changes can also be made to better serve the amateur community.

If you have any contribution to these topics, the Rules for this contest are available at the WIA web site at http://www.wia.org.au/contests/johnmoyle/ which already contains my contact information and please feel free to contact me with your submission for further consideration.

Well done to all of those stations that participated in the contest and well done those who bothered to submit a log. It is hoped that the number of logs to be submitted next year will return to the recent trend of increased log numbers.

I wish to thank those who did send in photographs of their equipment set-up and personnel involved for inclusion in the AR magazine. These have been submitted to *AR* along with this report so please give Peter Freeman *(editor-armag@wia.org.au)* anything else you have for later use for the magazine.

Silent Key Colin King VK4CK

It is with deep regret that we report another Silent Key. Colin Melville King, VK4CK, from Keperra in Brisbane, became a silent key after a short illness on 30 December, 2010, aged 88 years. Colin was born in Temora, NSW, and grew up in Wagga.

By Colin's own account "*I saw a wireless set for the first time during a visit to an uncle*" (October 1934). With help from the postmaster's son, at age 12 he built his first crystal set complete with a galena crystal and "cat's whisker" and listened to the local broadcast station 2WG. Colin's first glimpse inside a wireless had to wait till his family bought their first set - a "Genelex" standard upright cabinet model. On Sunday nights he would listen to amateur station VK2YW at the top end of the dial.

Following technical study through the Sydney based Australian Radio College, Colin commenced work with Wagga Wireless Distributors, servicing Stromberg-Carlson radios.

In the photograph Col is sitting at the 2CO station console equipment with the AWA 2 kW transmitter in the background.

In 1941, Colin enrolled in the RAAF Reserve, and like many others in that era, he enlisted in the Air Force in April 1942. He trained as a Wireless Operator/ Air Gunner and served with 14 Squadron based at Pearce, Western Australia, conducting submarine patrols and convoy duties over the Indian Ocean. He later served with 100 Squadron operating Beaufort Bombers in the South West Pacific where he survived 87 strike missions and was promoted to Flying Officer.

During his 'spare time', Colin studied for the coveted First Class Operators Certificate of Proficiency (FCOCP) and Broadcast Station Operators Certificate of Proficiency (BOCP) and passed the exams in 1944.

After the war Colin's first job was with the Commonwealth Department of Civil Aviation at Mascot, Sydney Airport as an Aeradio Operator. Subsequently, in 1946 he was offered a position as a radio Broadcasting Technician at Station 2CO (ABC) in Corowa, NSW.

It was in Corowa that his studies were most important to him and he

Continued on page 45

Club Grant Scheme 2011

The WIA has allocated $6,000 to the WIA Club Grant Scheme in 2011.

In 2011 the WIA is supporting projects that fall within one or other of these two categories:

Projects and activities to be conducted before 1 June 2012 to attract new amateurs, but focussed on people under 25; or

Amateur radio projects that are useful and innovative and that utilise both information technologies and radio communications.

The Board, which makes the final decision, is advised by a Grant Committee of three independent amateurs. The members of the Grant Committee for 2011 are Wally Howse VK6KZ, Bob Tait VK3XP and Peter Lowe VK3KCD. The 2011 Grant Committee has been asked to recommend the distribution of the $6000 between the two categories of projects and between particular projects.

The timetable for the 2011 Scheme is:

Applications for Grants to be lodged by	Monday 25 July 2011
Grant Committee to make its recommendations by	Monday 26 September 2011
Grants to be announced by	Monday 24 October 2011

In 2011:

- Particular emphasis will be placed on the percentage of WIA members in a club when considering competing applications;
- Clubs must use the Application Template to be found on the WIA website supported by attachments;
- Successful Clubs may be asked to do certain things before they receive their Grant (for example, demonstrating that adequate additional funds needed for a project are available);
- Successful Clubs will be required to report to the WIA on the utilisation of the Grant they have received by:
  - providing evidence of the disbursement of the Grant,
  - submitting a statement setting out whether or not the objects of the Grant were achieved, and
  - submitting a statement showing how the WIA has been recognised as a supporter of the project.

Clubs should check the Club Grant Scheme pages on the WIA website (http://www.wia.org.au) found in the "Members Area" under "Affiliated Club Benefits" and then go to "Club Grant Scheme". There can be found the Club Grant Scheme Rules, the Application Template and the previous Recommendations and Report, which show how the Grant Committee has formed its judgements in recommending previous Grants. The previous Recommendations and the Report should assist clubs to identify the evidence needed to support an application.

Applications must be lodged by 25 July 2011 with the WIA office addressed:

Club Grant Scheme
PO Box 2042
Bayswater Vic 3153

Continued from page 44

graduated to a Radio Inspector in 1953. He was immediately offered a position with the Radio Branch of the Postmaster-General's Department (PMG) as the officer in charge of the Armidale district. While he was living in Armidale, Television was introduced into Australia and the TV Operators Certificate of Proficiency (TVOCP) became a requirement for technicians working on TV transmitters. Colin did more study and obtained his TVOCP in 1957.

Promotion was not long coming and in 1959 Colin transferred to Townsville in a senior role as the District Radio Inspector (DRI). His responsibility now covered a large area of Queensland and he was instrumental in upgrading communications using HF radio between his office and the Regional headquarters in Brisbane.

During his time in Townsville Colin joined the "Moonwatch Group" tracking artificial satellites for both the USA and Russia. His work was recognised with a citation from the Smithsonian Institute, USA. Colin was the only person in Australia and one of three in the world to track the first man into space, Yuri Gagarin.

Continued on page 52

ALARAnews

Margaret Blight VK3FMAB – Publicity Officer

At the time of writing this article the weather is still being gracious, well into autumn! We have had enough rain to keep up the green glow on lawns and gardens, but the leaves are slowly beginning to turn and we are experiencing the beautiful brown and gold colours that appear as the leaves begin to fall.

Following the installation of extra water tanks around the house and garden only about a year ago, we are now wondering how to use the extra water. Having placed a larger tank upon the previous tank's stand, it is suffering under the weight and so has to be emptied as repairs need to take place. It is hardly conceivable that such a change could occur in such a short period of time.

The OM Andrew VK3BFA and I decided to take a week's break in Tasmania. We sailed over on the Spirit of Tasmania, taking our own car with radio installed, hoping to catch up with operators while over there. Unfortunately, neither of us checked the location of the repeater listing, both believing it was safely installed in the glove box. On arrival we discovered that while we had repeater listings for most other States. Tasmania seemed to be missing. Let this be a warning, never take for granted that something will always remain where you think it should be.

Otherwise the holiday visit was very relaxing. The weather was kind; it only rained lightly and not too often. We visited Hobart for a few days and enjoyed the Saturday Salamanca Market. Then it was up the East Coast for a brief stay overlooking the ocean from a holiday unit, then on to Orford to visit with relatives for two nights. It is always difficult to tear ourselves away from this lovely Isle and we hope to return soon, this time including the appropriate repeater information.

Midlands & Shepparton Radio Clubs BBQ.

VK3 news

Organising Get-togethers

There is great potential for Clubs to meet and greet their fellow operators by organizing an event in which two or more Clubs can come together for a social occasion.

The Midlands Radio Club and the Shepparton Radio Club combined to organize such a social event. They met for a barbeque at The Goulbourn Weir which proved to be a very pleasant spot. Although the weather was overcast, there was a good turn up with approximately 36 persons present. It appears there are a lot of good cooks in the region as reports of the home baked sweets provided after the barbeque were positively glowing.

Regional representative Jean VK3VIP and her OM John VK3DQ were in attendance and found everyone very approachable and friendly. A number of ALARA members participated. Monica VK3FMON and her OM Kevin VK3CKC brought along his portable trailer mounted tower and set up a HF station which provided the opportunity for everyone to test the equipment.

The EMDRC held a National Field Day operation at Lilydale Lake in April. Some enthusiastic members arrived at the car park by 4.30 am with others arriving around 6.00 am to set up a marquee and equipment for the day. This impressive dedication was rewarded by giving them a ringside seat into a viewing of some local nightlife (human unfortunately) who were still performing at such a late hour, until a Police car arrived to bring a halt to the 'entertainment'.

Overall the Field Day was rated a success and about 40 amateurs made contact during the day. However, some further thought is being given to discovering the best way of supporting non-operators to feel encouraged to approach the display and learn more about the hobby. This is an ongoing challenge for all Clubs. It appears five stations from Victoria signed on for the day. EMDRC, Geelong, Yarra Ranges, and Rosebud Clubs all operated at least one station plus another located at the Williamstown Timeball by Amateur Radio Victoria. A great effort by everyone who participated, but there needs to be more consideration given to how each Club can provide their own unique way of promoting interest in joining up new members.

News from Dot VK2DB

Meeting and Greeting

OM John VK2ZOI and I were browsing along the shops in the Hornsby mall when we looked at a couple coming out of a shop and thought, 'gee we think we know them, but they live halfway to Queensland'. When we reached them we found it was Carol VK2FCSR and her OM Gary VK2ZKT. What a pleasant surprise!

Jean VK3VIP and Margaret VK3FMAB at the ALARA table at the EMDRC NFD station.

Dot VK2DB: This photo was taken in the ARNSW Shed which, among other uses, houses a good selection of old interesting radios and parts. The sign was from the previous VK2DB, Ray Biddle. He was an avid Amateur TV man.

We used to go away at Easter when John was at work as it was the only time he could get away but now he is retired, of course we don't go. Unfortunately, the family was unable to use the weekender so it remains empty these holidays.

Jenny VK5ANW and Peter VK3RV took a trip to Sydney. We were able to meet up for a few hours at Dural. They visited the Radio Museum at Kurrajong in the morning and we met at Dural that afternoon. Tim VK2ZTM showed us around.

Maria VK5BMT is visiting her daughter and grandchildren in Sydney and we hope to catch up.

My son Peter VK2ZCU travelled to Queensland on Good Friday to visit his brother and do some work for him. It took him 13 hours to get there: the traffic jams were horrendous. I watched him on APRS and found it very interesting. I was able to watch other amateurs I know travelling too. Fascinating, but a great waste of time if you are sitting at your computer supposedly doing work!

News from Jenny VK5ANW

From March 29 to April 4 2011, Peter VK3RV and I spent some time in Sydney. Peter had two objectives, to do some historical research for the WIA, and also to visit some Sydney theatres and cinemas with the Cinema and Theatre Historical Society (CATHS). There are many connections between cinema and amateur radio operators! I also had two objectives to play tourist and go shopping! Oh, and a third one, to try to meet up with Dot VK2DB!

On the day after our arrival in Sydney, Peter went to spend some time with Pierce VK2APQ. Pierce is 99 years old (he will be 100 in August) and is a former VK2 President and VK2 Federal Councillor. He is a man with much amateur radio experience who is possibly best known for his Amateur Radio Notes in *Electronics Australia*.

The following day was spent in Sydney, including a large part of it at the magnificent Botanical Gardens, followed by some shopping! On Friday, we headed to Kurrajong on the eastern edge of the Blue Mountains, to visit the Kurrajong Radio Museum where we were warmly welcomed by the owners Ian O'Toole VK2ZIO and his wife Pat. Also present, was Tim Mills VK2ZTM, whom Peter and I had not seen since the early 1980s when we all attended WIA Federal Conventions in Melbourne.

The Kurrajong Museum is a fascinating place which we thoroughly recommend to anyone with an interest in radio, be it Amateur, Commercial or Military.

After lunch, Pat and I went for a wander around her garden while the OMs continued to talk radio! Then, sadly, it was time to leave. We followed Tim for a bit over an hour finally arriving at Dural, the Headquarters of Amateur Radio NSW and the home of VK2WI.

As we pulled up, Dot VK2DB and John VK2ZOI arrived - can you spot why Ian and John can cause confusion when they are both on the air? (I should also admit that several emails and phone calls ensured this "coincidental" meeting!) Tim then gave us a guided tour of the Dural "shed" which although it is not quite finished as far as some of the internal furbishing is concerned, is certainly a great credit to the VK2s and will serve them well for many years. We also had a look around the original Dural building which houses VK2WI. After an "in depth study" of the transmitting facilities, we all went our separate ways some two hours later.

The rest of the time for Peter and me was spent on the CATHS tour, and sightseeing. It was a busy week but a very enjoyable one, and our thanks to everyone mentioned who made it so.

More from VK5

Lesley VK5LOL went with her OM Hans VK5YX to a meeting of the North East Radio Club here in Adelaide and was delighted to see a number of other YLs there, too. Unfortunately she did not have a camera with her but the YLs included, apart from Lesley, Jeanne VK5OQ, Somkhith VK5FAAP, Jade and Betty.

News from VK4 - Visit to Borneo

On a recent holiday to Kota Kinabalu, in the northern Borneo state of Sabah, Catherine VK4GH and her husband John VK4IO met up with Steve 9M6DXX and his wife 9M6EVA, who have lived in Kota Kinabalu for about five years. Steve is often heard from other locations as well, especially IOTAs, and his next major DXpedition is to East Timor 4W6A later in the year. He was very happy to meet us for dinner on our first

VK4IO, 9M6DXX, 9M6EVA and VK4GH at Tanjung Aru Resort, Borneo.

Women in the Services during Wartime.

evening, as he was off to Sarawak for the WPX contest that weekend, and it was great to get some local perspective and ideas. On our last evening in Kota Kinabaul, Steve and Eva took us to the Tanjung Aru Resort for viewing our one and only sunset over the water and another great meal. We enjoyed meeting them both very much, and hope to do so again in the future.

Australian women at war

Some of you might have viewed an interesting documentary on Channel 2 on April 21, entitled "Girls' own War Stories". It was an amalgamation of personal recollections and historic war documentary films which outlined the situation for Australian women when World War II was announced. Apparently it was never considered, at that time, that women would have a role in the war effort and only Nurses were considered for service at the start of the War. Eventually the Red Cross commenced training VAD (Voluntary Aid Detachment) volunteers in First Aid and, as women's interest in doing their bit increased, many attended the classes run by Mrs. Florence McKenzie, Australia's first female Engineer who trained hundreds of young men and women in the use of Morse code. Eventually there was an increasing need for women to offer their labour as more men departed to serve overseas. This period provided women with an opportunity to see an alternative lifestyle to the life of domesticity most of them had experienced.

As the War progressed many of Mrs. McKenzie's female graduates became employed as radio operators, cipher operators and code breakers. Most of the women interviewed looked back on that period with great nostalgia. They had been given opportunities to demonstrate their potential in ways they would not otherwise have had at that period of time.

VK3 news Amateur Radio Victoria News

Jim Linton VK3PC
www.amateurradio.com.au
arv@amateurradio.com.au

Great PR day for AR

The gathering together of people to run the Amateur Radio Victoria VK3WI interactive display at sunny Point Gellibrand Coastal Heritage Park was deemed to be a great success.

The Team Leader Terry Murphy VK3UP scored at least three media mentions. He was supported at the event by Michele Grant VK3FEAT, Barry Robinson VK3PV, Brian Hallam VK3DBH, Peter Cossins VK3BFG, Tony Hambling VK3VTH and Jim Linton VK3PC. Richard Coco VK3FLAG popped in to lend a hand.

The station consisted of a Kenwood TS-2000 using a five band ground mounted vertical for HF, two ICOM IC-706 MkIIGs, one feeding a 2 m/70 cm Diamond X50 vertical and the other with a magnetic mount. Among the layout was a Yaesu FT-817D QRP rig with a 2 m 5/8 vertical.

ATV transmission was from a self-contained station-wagon, where all that happened was captured mainly by Peter VK3BFG who immediately played it to air. Early mist over Mt Dandenong made the path problematic but the weather condition soon improved.

A highlight was when Greens MP Colleen Hartland MLC arrived and had her turn on the radio, leaving with a promise to feature a supplied picture of the occasion on her well read Facebook page.

A compilation of her visit, the rising and falling at 1 pm of the nearby time-ball sphere, and the day's happening are being produced by Peter VK3BFG and will form part of the entry.

Greens MP Colleen Hartland on the mike.

Bringing out his trailer mounted Keith Roget Memorial National Parks Award portable station, recently taken to parks in Gippsland, was Tony VK3VTH who attracted a lot of interest.

At the end of a fine day, more contacts seemed to have been made than last year and many more stopped by to see what amateur radio had to offer them, and what it was all about.

Big cards cause problems

Users of the VK3 Outwards QSL Bureau are reminded that their cards should be no bigger than the standard size of 140 mm by 90 mm.

All users should note that large cards will just be returned in future. Part of the agreement to use the VK3 Outwards Bureau is to stick with the size limits. This is reflected by the requirements of Australia Post and the automated systems used.

The guidelines that appear on the Amateur Radio Victoria website are sent along with a pre-sorting prefix list and preferred distribution method. Users of both the Outwards and Inwards Bureau operated by Amateur Radio Victoria are required to be registered first.

Read at the *All about QSL cards* section of the website. It covers the history and the basics for all users of the Bureau which not only limits the size of cards but restrict them from being printed on paper.

Membership inquiries

To join and support the state-wide organisation Amateur Radio Victoria costs $30 for Full or Associate membership and $25 Concession, for two years. New members are most welcome and an application form can be found on our website or posted out on request.

Don't forget

18-19 June Winter VHF-UHF Field Day

Field Day botch-ups and other lessons learned

Peter Ellis VK1PE

The author confesses his John Moyle Field Day 2011 lessons, so that you do not need to do them, and shows off his Field Day Fence Wire, Lash-up, Over-and-Under, 2 m/70 cm beam.

For some reason, I got excited about going into the field for the John Moyle Field Day, held over 19/20 March, 2011. Planning was simple after I downloaded the 'field day checklist' spreadsheet used by long-standing field day practitioner Andrew Davis (*www.vk1da.info*) and updated it for my equipment.

For some reason I thought that Mount Coree (QF44jq) was a good idea for the field day; it is at the south-west end of the straight-line part of the border of the ACT and NSW, at 1,388 metres altitude. I had heard that it was accessible by 4WD. My youngest son had just bought a second-hand all wheel drive Suburu Forester which he was happy to swap with my little front wheel drive runabout for the weekend.

I had thought through the checklist for weeks. I had not actually gathered the gear in one place (Bad Move #1), though I had bought the straight pine boom of the VHF/UHF beam several days before. Several weeks before, another ham had advertised a small generator for sale. This was 'new' in that it had never run, but was surplus. I figured that I would just run it through a small UPS I have, then a 20 A power supply with a large transformer inside, the combination thus smoothing out garbage from the generator. Try as I might, the generator had not 'fired' for me, but I would rely on it (BM #2).

On the day

On the morning of the event I started at about 7 am, knowing I would be wanting to be on the mountain by about 10.30 am for set-up ahead of the noon start for the Field Day.

I cut the 2 m and 70 cm elements from the roll of 2 mm fence wire and numbered them with dobs of permanent marker to identify them, and threw in the box of those bent-nails used for connecting wire to fence posts. Oh, and I also soldered the feedline to the driven element, a folded piece of 3 mm copper tube. This was a lash-up arrangement loosely based on a field day 2 m design from EI9GQ and a 2 element each 2 m/70 cm design by DK7ZB, both found via *www.dxzone.com* I also drilled holes on one PVC mast and put some fence wire loops through to become the mast for the 2 m/70 cm beam.

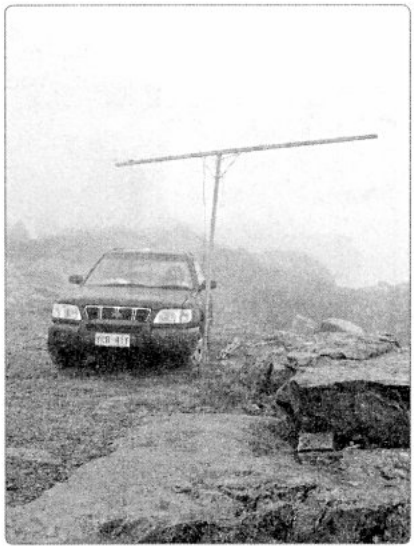


Photo 1: Sunday morning gloom. The Mt Coree fire tower and trig point are in the cloud.

By this time I was packing the Forester, using the list in my head more than the one on paper (BM #3). In the back, the generator, a roll of three-core electrical flex for me to make up 12 V interconnects and be a counterpoise if needed, the 20 litre drum of petrol for the generator, and a funnel and siphon tube, so I could then fill the car as I ran the engine overnight. And, lots of rope. (Good Move #1). In the passenger seat foot well went two high capacity batteries I had been charging for weeks off a small solar panel. I expected the passenger seat would also become an operating position. Lashed to the roof were the 3.6 m beam and several lengths of PVC pipe for masts. I was distracted by noticing an antenna I had stashed in the rafters of the garage, a 6 element, fold-down, low-band TV antenna on two boom pieces which I thought might be useful for 6 m, so it went in, too. (BM #4). So, finally packed, I locked the garage and left for the mountain, stopping at the local petrol station, my last chance to miss anything.

The TV antenna had already rattled, and 'off-road' it rattled enough to be very annoying. Looping cloth around and through the elements would not shut it up (Refer to BM #4?). I got lost. My small Google map just did not make enough sense. I realised that the 'survey' map was probably on the dining table (BM #5) where I had been discussing the destination with my wife. How hard is it to get lost only 25 km from home, I thought, when you have the destination and some road intersections in the GPS? (While unpacking, I found the map!) There were other people in the forest reserves. I stopped and asked directions from trail bikers (GM #2) whose directions took me over the roughest road imaginable in first gear, low range, but through a wonderful forest; the Forester was in its element. The rattling from my least-favourite antenna was immense. I spotted a sign to the summit, and got there about 11 am, in a full white-out from cloud.

Despair, and invention

I worked out where to set up, and began to assemble the beam antenna. Hmmm... driven element and coax? Garage! (See BMs 3 & 4.) Just short of despair sending me home, I realised I had thrown in a gutter mount and my own car's 2 m/70 cm whip; these could became the driven element of the beam, along with a counterpoise made from triple-flex wire (GM #3). I also realised that I had left behind the tape measure (BM #6). The shortest 70 cm element was a known length, so I guestimated from it. The staple-nails worked a treat with the fence wire elements, 9 elements on 2 m on top, 14 elements on 70 cm under the 3.6 m boom. Thus, from a necessary

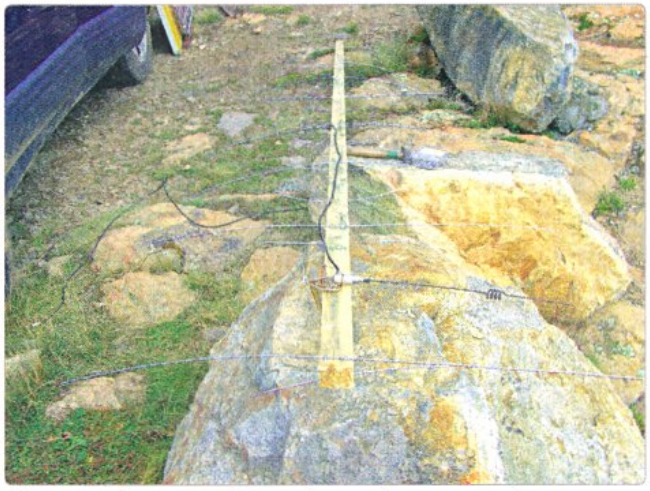


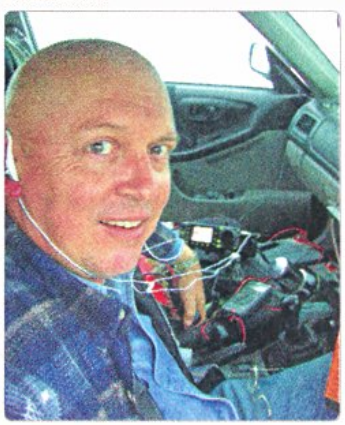
Photo 2: The 2 metre/70 cm beam after construction.

rediscovery of field day can-do, was born the *Fence Wire, Lash-up, Over-and-Under, 2 m/70 cm beam.*

This former Sea Scout and Navy seaman officer did a solid job of lashing the beam to the PVC pole then the pole to the tyre of the car. Hint: Turn the steering and the wheel becomes a good mount; leave several turns of rope around the pole so it will slip when you twist it, but grip when pointed; this arrangement worked well even in quite high winds (GM#4). Have a knife handy, though, in case you need to get away in a hurry.

I also set up the HF/6 m long-wire antenna off the automatic tuner, grounded with stakes into the only soil visible. Despite a 7 m squid pole lashed to a rock, I thought that this 100 m hookup wire antenna was always going to be close to the ground and not greatly useful; and, I was correct. Later, when the rain came, something happened that made it impossible for the tuner to get a match. Early on, though, I had several contacts on 50, 28, 21 and 14 MHz.

Photo 3: Peter VK1PE working from his JMMFD 'shack' on Mt Coree, near Canberra.



Visitors

I did say that this was a mountain, in a national park, 25 km from Canberra and I was staying overnight. That is why I was visited by two 4WDs, one at 1:50 am (two young yobbos who quaffed beer and stayed 40 minutes) and at 3:35 am (a bloke and two women, who went to the fire watchtower, got cold, and left after just 10 minutes). They probably all thought I was the odd one for being on a mountain in the middle of the night!

Frustration Day

Sunday's early morning also brought light, misting rain, more than just cloud, and it was windy. Getting out of the driver's seat to twist the pole was becoming tedious. Thankfully, I was able to keep the passenger door fairly tightly shut against the cables using a rope from the door handle, and the rain did not get inside.

I had to start the engine about every 2-3 hours, to warm the car and to charge the two main batteries. I had run a triple-flex from the engine battery, and used a terminal block to connect the positive line when charging. The screw driver was in my shirt pocket where I could not lose it in the dark (GM #5).

It was obvious that the VHF/UHF antenna was giving only a little gain; stations much lower were hearing distant stations in VK3 quite well, and I was hearing just a whisper if at all. I heard nothing from Sydney, the southern highlands to the north-east, Melbourne to the south-west or Gippsland to the south. Christopher Davis VK1DO had said he could hear Gippsland's beacons from his vehicle in Canberra; admittedly a 14 element 2 m vertical array on the top of a van. I began to dismantle the antennas and pack the car at about 8 am; the HF was useless and the squid pole was down in seconds despite the wind. The sundry items were piled into the back, topped by the useless TV antenna that I wound in overalls to reduce the clanking.

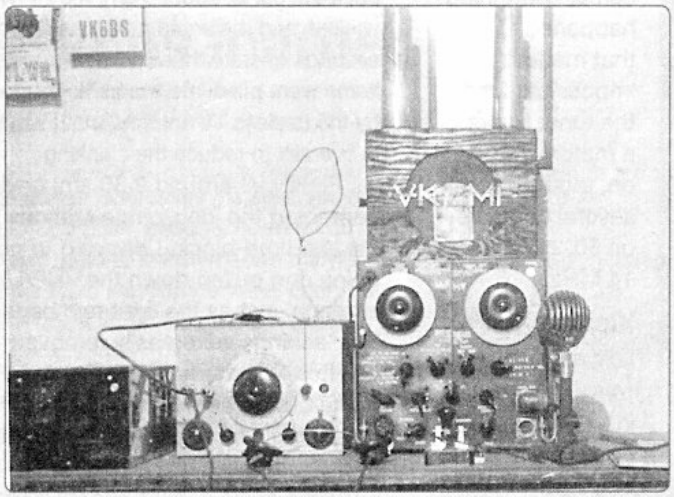
Finally, at around 9.30 am, having contacted the long-range stations in the last time-block, I decided to get going and pulled down the VHF/UHF antenna, just as the light rain began. The lashings were easily removed as I had intended; the elements came out of the hoop nails using multigrips. I lashed the poles to the roof and did a last check for gear and, importantly in a National Park, for any of my rubbish. I had been careful to even strip the triple-flex, those little bits of PVC covering the wire, into the back of the car (GM #6). My parka was shown to be non-waterproof and quickly soaked, and I dumped it into a rear foot well.

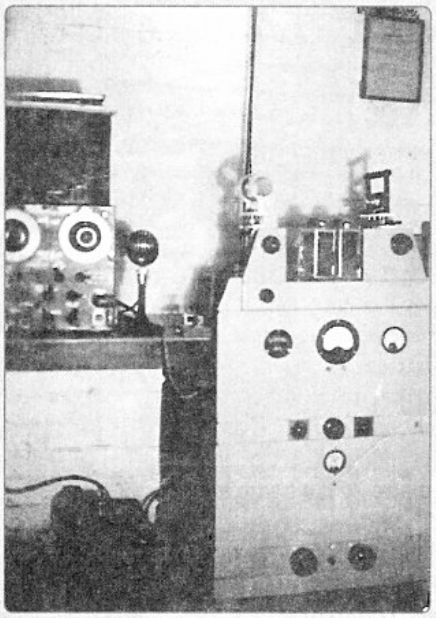
The drive down the mountain was eventful, too. I took the more travelled route, still almost all in 'low range'. The rain-slicked tracks and chunky but not off-road tyres also meant that I slid on several occasions, which my wife later heard me mention in conversation (BM #7). At a deeply rutted bog across the road I did some 'real off-roading' to get by, not wanting to have to leave the vehicle in the middle of that. Moments later, though, I came face-to-face with five real 4WDs coming the other way, so I would not have been stuck.

At home, I unpacked then took the vehicle to a local car wash; money well spent. I was glad of a shower before rejoining the family's Sunday events. Results were mixed: several distant portable stations were worked regularly, VK2WG/P (Wagga club) at around 120 km and Colin VK2BPK/P (Parkes club) at 170 km near Grenfell proved useful for my score: 310 points claimed from only 38 contacts (24 hour, single op, phone, all bands).

Will I do a field day again? Certainly. Will I be truly prepared? Probably!

Continued from page 45





Some of Col's early equipment.

Colin moved to Brisbane in 1962 to take charge of the Technical Section of the PMG Radio Branch in Queensland and in 1972 was appointed as State Superintendent. The PMG was disaggregated into Telecom Australia (now Telstra) and Australia Post in 1975 and the Radio Branch moved to the newly created Postal and Telecommunications Department. On Colin's retirement in 1982 he was Queensland Manager of the Department of Communications (DOC) (now known as the ACMA).

Never one to leave a stone unturned Colin was constantly studying everything that was offering in the field of Radio Communication including studies through the British Institute of Engineering Technology. In recognition of Colin's engineering qualifications, he was admitted into membership of the Institution of Radio and Electronics Engineers, Australia in 1977. He served in various positions with the IREE, including Secretary and Chairman of the Brisbane Division. In 1980 Col was awarded Honorary Membership.

Colin's amateur activities started after the War in 1946 with the callsign VK2MF. His first "shack" was located in the kitchen of their house at Wagga. With the move to Corowa, the shack moved to the cellar. His first transmitter was a Pierce oscillator delivering about 1 Watt to an end-fed Zep on 40 Metres. He was a keen CW operator. In those days home construction was a key element of amateur radio activity and Colin had some beautifully made gear. One of his projects was a 100 watt AM Tx. It used two 807s in the push-pull modulator with two 807's in the final. Instead of band-switching he used plug-in coils. The tank coils in the final stage were made of rigid copper tubing and the output was fed by open-wire feeders to a centre-fed 40 metre dipole. Like a lot of other amateur operators at that time, he used toothbrush handles for spacers in high impedance transmission lines.

Before the days of WICEN, Colin was active in providing extended and essential communications for the Walgett Shire Council. In 1956 during the severe flooding of many towns in north west NSW, vital roads were cut and phone lines were down. When the levee banks protecting the town were breached, Colin used his equipment to arrange for the Walgett Shire Council to fly-in parts for the town's bulldozer which was hurriedly repaired and used to restore the levee.

An amateur's life is not all radio and usually involves some hard physical work.

Colin had to dig out space for his shacks under the houses in Armidale, Townsville and Brisbane and the station was not complete without a trusty windmill tower redeployed from a local farm.

The call sign VK4CK (Col's initials) was not available until the time when he was State Superintendent and he wasted no time in having his previous call sign changed. He was very proud of his call sign.

Colin was a very energetic man, and apart from his involvement with many clubs and associations, he found time to write and publish three books - one being the "Song of the Beauforts" which records the exploits of the Airmen of the first Australian squadron in action in World War II. It is now in its second heritage edition. Col's passion for the Australian made Beaufort bomber drew him to the group that is currently restoring a famous war-bird (A9- 141) to flight status in a hangar at the Caboolture Airfield, just north of Brisbane. He was instrumental in restoring the radio equipment that will go back into the aircraft. During an interview with Kerry O'Brien on the ABC's "The 7.30 Report" in 2002, Col explained "Australians can look upon a Beaufort as a symbol of what Australia can do".

Colin was a strong supporter of the WIA and in accordance with his wishes, his radio equipment was donated to the Ipswich and District Radio Club as the club nearest to the flood-devastated areas of South East Queensland.

In recognising Colin's very active life, we extend our sympathies to his family and to his many friends as they mourn his passing.

Submitted by Alan VK4AAE and Gary VK4AR.

Spotlight on **SWLing**

Robin L Harwood VK7RH

It is winter already and I am pleased to report that I am able to monitor once more. The recurring ear problems seem to have finally disappeared. Yes there are even more gaps within broadcasting allocations on HF as more major shortwave players exit the spectrum. This has revealed small domestic outlets that were immersed under the powerhouse signals. But the prognosis is still not good as the days of hearing broadcasters such as the BBC and Radio Netherlands are rapidly going. In case you were not aware, the BBC aims to quit shortwave entirely by 2015. Radio Netherlands aims to quit as early as next March. They are closing down the relay station in Bonaire and the future of the Madagascar relay is unclear.

The VOA as predicted dramatically increased their output, particularly in Arabic, following the continuing unrest in North Africa and the Middle East. Radio Sawa can be heard but they seem to be shifting channels almost weekly to take account of possible jamming. Civil war has broken out in Libya and the United Nations authorised a no-fly zone which has been enforced. Control for this enforcement has passed to NATO. As recently mentioned in this column, PSYOPS returned and was heard in southern Europe on 10405 USB. Broadcasts were mainly loops in Arabic, English and French, warning shipping not to leave port otherwise they would face dire consequences. 10405 at the time seemed to be an odd choice but it happened to be a known Libyan defence channel. The PSYOPS operation has not been monitored here although I have heard a recording off the Internet.

The BBC seemed to have also relented and I believe Hindi and Chinese were to be again heard on HF from May 1. The Chinese have a massive firewall that prevents any broadcaster from uploading any Chinese language podcasts that may criticise the current Chinese situation, hence the re-introduction of shortwave.

Talking of changes: Have you heard Radio Australia of late? They no longer relay the domestic Radio National and have now resumed their own programming. They have two streams, one for Asia and the other for the Pacific. Programming in Vietnamese, French, Indonesian, Burmese and a composite Melanesian language known as Tok Pidgin are the only non-English languages aired.

I have heard Burma or as it is now known Myanmar on 7200.05 from 1100 to sign-off around 1315. The modulation is terrible at times and I also have heard a spur on 7186 which is barely audible. I cannot determine where it is located whether it is Yangon or the "new" national capital. They apparently alternate senders between the two. When they sign-off, they re-appear on 5976. Frequency stability does not seem to worry them.

Silent Key — **Professor Charles Miller VK7CM**

It is with deep sadness that I noted the passing of Charles Miller in the death notices on April 11. Charles passed away peacefully on Friday, in his 91st year. While I had not seen Charles for many years, my memory of him is of a gentle, kind man and of a highly respected Engineer who headed the Faculty of Engineering at the University of Tasmania for many years.

I am sure that there are many other who knew Charles much better than I did and who will be saddened to hear of his passing.

Vale Charles.

Winston VK7WH

Hamads

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